

**REPAIR MECHANISMS IN SIMULTANEOUS INTERPRETING.  
A CORPUS-BASED ANALYSIS OF INTERPRETERS' DEPLOYMENT OF  
PROCESSING RESOURCES (ENGLISH/FRENCH/GERMAN)**

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## Abstract

The aim of the present thesis is to investigate the phenomenon of repairs in simultaneous interpreting as a source of evidence of the interpreter's deployment of processing resources. Taking an interdisciplinary approach, the study combines research carried out in psycholinguistics and neurolinguistics on speech production with studies in the pragmatics of speech reception. The thesis seeks to address the following questions:

- 1) Is Levelt's (1983, 1989) claim justified that repair is more than a matter of error correction?
- 2) If error repair is not the main motivation, what are the interpreter's priorities and the main drivers of repairs?

A principally qualitative method is used in the analysis of a trilingual corpus (English/French/German) composed of eight professional conference interpreters recorded at four different international conferences. Various categories of repairs emerge from the numerous instances of repairs found in the corpus. They are analyzed according to Sperber and Wilson's principle of relevance theory as well as Gutt's notion of interpretive resemblance. The study concludes that interpreters' main motivation is not the correction of an error but the wish either better to resemble the original input or to ease the audience's effort and maximise the effect of the output. The analysis shows that interpreters are willing to deploy further processing capacities in order to reach improved resemblance or relevance. The study of repairs in simultaneous interpreting provides further insights into the interpreter's mind at work and sheds light on a subject which has been largely neglected so far.



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**Abbreviations and symbols**

A-repair	Appropriateness repair
D	Disguised
D-repair	Different-repair
E-repair	Error repair
EVS	Ear-Voice-Span
J	Juxtaposed
HU	Hutschinski (ICSB corpus)
Mid-Art. repair	Mid-Articulatory repair
MU	Mugler (ICSB corpus)
S	Signalled
SL	Sloan (ICSB corpus)
SS	Social Security-French (corpus)
SS M	Social Security-German/male interpreter (corpus)
SS U	Social Security-German/female interpreter (corpus)
TC	Telecommunication (corpus)
TW	Telework (corpus)

## Chapter 1 Introduction

The aim of the present thesis is to investigate the phenomenon of repairs in simultaneous interpreting in order to gain some access to the interpreter's deployment of processing capacities. Taking an interdisciplinary approach, the study combines research carried out in psycholinguistics and neurolinguistics on speech production with studies in the pragmatics of speech reception. The thesis seeks to address the following questions:

- a) Is Levelt's (1983, 1989) claim justified that repair is more than a matter of error correction?
- b) If error repair is not the main motivation, what are the interpreter's priorities and the main drivers of repairs?

From the perspective of many other scholars, error correction is expected to account for all or nearly all repairs. The quantitative study will investigate the proportion of error corrections within the total of repairs found in the corpus.

Simultaneous interpreting is an act of communication performed at international conferences to allow participants to follow the proceedings in the language of their choice. It is now taken for granted and numerous conference rooms around the world have built-in booths. However, simultaneous interpreting as we know it today is a rather new form of interpreting which was developed after the Second World War in order to improve on both modes of interpreting that had been used, thus consecutive, where the interpreter listens to a speech, takes notes and then interprets it into another language, and whispering, where the interpreter murmurs the translation to one or two delegates while the speaker is delivering a speech and thus interferes with the speaker's voice. Simultaneous interpreting therefore presents enormous advantages. On the one hand, it saves time as the interpreter is not waiting for the end of the speech to start his/her rendition and on the other hand, it allows more than two listeners to benefit from the translation. More importantly, several languages can be interpreted at the same time (see Gaiba, 1998). At the United Nations, for example, six different languages are used at meetings while delegates at European Commission or Parliament meetings can communicate through 11 languages, which soon will be augmented to 21 following the enlargement of the European Union in 2004.



Simultaneous interpreting is generally considered a highly skilled communicative task which involves several concomitant activities. Unlike the written translator who has some time to finish or polish his/her translation, the interpreter needs to perform 'on line' and 'on the spot'. Therefore, the skills required to interpret can be qualified as being rather different from those of a written translator. Indeed, the simultaneous interpreter needs to deploy various processing resources in order to perform this task. Not only does s/he have to listen, understand and process an input but s/he also has to produce an output simultaneously – or at least with a short time-lag – while still processing further input. Shlesinger (1995: 194) posits three main constraints for the simultaneous interpreter. First, the "time constraint", in other words, the interpreter needs to understand and speak at a pace set by the original speaker. The interpreter does not have any influence over the rate of speech used by the speaker. This means that interpreting can "entail a tradeoff among the different processing operations". The interpreter needs to divide his/her attention between the different tasks at hand. Secondly, the "linearity constraint", in other words the simultaneous interpreter only has short units of utterances to process while the translator can look at the entirety of the text. This means that some information might not have been disclosed for the simultaneous interpreter who can only deal with the speech which is unfolding. Therefore, s/he will need to deploy specific strategies in order not to misinterpret the utterance. Thirdly, the "(Un)shared knowledge constraint", that is, the knowledge shared by the speaker and the audience, both specialists in the topic discussed, which might not be shared by the interpreter who is not an expert in the field. All of these elements explain the difficulties encountered by simultaneous interpreters and the possible occurrence of trouble.

Interpreters – like speakers – have access to a monitoring function during speech production. During simultaneous interpreting, the interpreter divides his/her attention between the listening, understanding, processing, producing and monitoring of speech. This control mechanism allows him/her to edit his/her own output and therefore possibly produce a self-modification, also known as a repair. In this thesis, a repair is defined as any modification effected by the interpreter to his/her own output.<sup>1</sup> Repair mechanisms have been studied by

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<sup>1</sup> For further details see section 2.4



various scholars (see for example Laver, 1973, 1980; Schegloff *et al*, 1977; Levelt, 1983, 1989; Berg, 1986a, 1986b; Van Wijk and Kempen, 1987; Postma and Kolk, 1993) in order to explore the production of speech and more specifically to better understand what the correction of errors in speech can tell us about the whole process. The following example taken from our corpus illustrates the repair mechanism in simultaneous interpreting. The original input is presented on the first line followed by the interpreter's output in bold typeface and a gloss in italics (see example 68 in section 4.5.1.3 below):

(...) So I'm executive offi[cer with Telework Ireland.

(...) **[Je suis donc le responsable e::: du développement e::: du**  
*I am so the responsible for development of*

**telework donc du télétravail en Irlande l'organisation qui s'appelle Telework Ireland.**  
*telework so of telework in Ireland the organisation whih is called Telework Ireland*

This instance shows how the source of trouble is identified, goes through the monitor and is attended to by the interpreter who repairs. This process of identification of trouble followed by the decision to repair gives us some – even if limited – evidence of what is going on in the interpreter's mind. A study of repairs in interpreting gives us an opportunity to observe, in a non-invasive way, the interpreter's mind at work in real time. Indeed, there can be different ways of finding out more about this complex activity. Some researchers try to gain access to the interpreter's black box, in other words the cerebral processes taking place during simultaneous interpreting, by using EEG (electroencephalogram) probability mapping methods (see Kurz, 1994: 202) to "yield insights into the mental processes underlying activities involving complex verbal thinking". Other researchers devise experiments of a physiological nature by looking for example at pupillometric responses (see Tommola and Niemi, 1986) to record changes in the course of a specific task performance. Others prefer to use Thinking/Talking-Aloud Protocols (see Hönig, 1991) where they ask translators or interpreters to verbalise their thoughts about their choice of words or expressions either during the process for translators or afterwards for interpreters. These protocols are used to shed light on the translation or interpreting process. Both the EEG probability mapping as well as the physiological studies such as pupillometric research are rather invasive. The



Talking-Aloud Protocols are an indirect way of asking subjects to report on what is going on. Therefore, evidence of repairs in simultaneous interpreting is a more direct and non-invasive way of shedding light on the process.

As already stated earlier, scholars working on speech production have generally regarded repairs as the correction of errors (see for example Fromkin, 1973; Laver, 1973; Berg, 1986a, 1986b; on the notion of 'error' see below). Due to the complexity of the concomitant activities in simultaneous interpreting, it seems interesting to establish first of all on an empirical basis, whether interpreters take the time to repair. When they do, we need to establish whether the sole or main purpose of repairs in simultaneous interpreting is the correction of errors. If error repair is not the main motivation, what, then, are the interpreter's priorities and the main drivers of repairs?

In addition to this, I had a personal interest in the subject and an intuitive point of departure as well as a scientific one. Having observed the occurrence of repairs in my own simultaneous interpreting output, I was interested in finding out more about this phenomenon and what it could tell us about the whole process. In order to answer these questions, I decided to focus on an empirical analysis grounded in a corpus-based approach and a theory of speech production and comprehension – including monitoring – adapted to simultaneous interpreting and incorporating a pragmatics dimension. If pragmatics is that part of the study of communication that is concerned with matching a sentence with its context (see Levinson, 1983: 24), then any model of interpreting must surely incorporate a pragmatics dimension, given that all interpreter utterances take place in, and are constrained by, a context.

A corpus was compiled from the work of eight professional conference interpreters working with three different languages (English-French-German) at conferences on topics of a general interest. The first four subjects are fellow interpreters working on the Irish freelance market whereas the other four are recordings of interpreters kindly provided by two colleagues in interpreting research, one in Switzerland and one in Austria. All eight interpreters were working at international conferences and accepted to be recorded for the purpose of academic research. It was decided to take a sample of ten minutes per interpreter in order to focus on



more varied data rather than longer passages for a smaller number of interpreters. Following the recordings, the corpus was transcribed following a set of transcription conventions (adopted from Mason, 1999). For reasons of clarity, it was decided to underline the repairs and present the examples with three different lines: first the original speaker's input, secondly the interpreter's output in bold typeface and thirdly a gloss of the interpreter's translation in italics. All instances of repairs identified were categorized into different types in an attempt to identify the 'trigger' – or source – of the repair. It was decided to give representative samples from each category and to discuss them in detail to illustrate the problems involved. It is important to note from the outset that the study cannot answer the research questions outlined above definitively and comprehensively. The data show the behaviour of these interpreters on these occasions, in other words, the analysis is based on the most plausible interpretation of the behaviour in the given context and cannot be applied to all interpreters.

The thesis is divided into four main chapters with various subsections. Following the introductory chapter, I will look at studies in speech production and reception in order to elaborate a theoretical model of these processes. Although the main focus of the thesis is the simultaneous interpreter who receives first and then produces, speech production is presented before speech reception because I am focusing on the speaker first and not on the interpreter. Scholars in psycholinguistics and neurolinguistics (see for example Laver, 1973, 1980; Levelt, 1983, 1989; Van Wijk and Kempen, 1987) carried out extensive research on the existence of a monitoring function in speech production. Although the place of the monitor within any overall model is not universally agreed, all the scholars agree that the logical consequence of the monitoring function is the occurrence of repairs in speech production. The correction of 'errors' has been studied by researchers in order to shed light on the spontaneous production of speech (see for example Garrett, 1980; Cutler, 1982; Berg, 1986a). The notion of 'error' is described as an anomaly of speech, which needs to be corrected. 'Errors' that have been noted in the literature include disfluencies such as spoonerisms, slips of the tongue or blends which have been examined in scholarly work to understand the 'mechanisms of the mind'. Such work has mainly focused on spontaneous speech, conversations or artificially elicited slips (see Fromkin, 1973; Laver, 1973; Nooteboom, 1980; Berg, 1986a among others). As will be seen, the notion of repair found in



this thesis is different and goes beyond the simple correction of a disfluency. Indeed it will be shown that a repair can be produced when there is no distinct fault, or conversely, a disfluency may be detected but not corrected. Therefore, repairs are defined as mechanisms used to match the output against its fitness for purpose.

As well as repairs occurring during the process of simultaneous interpreting, the literature also avers that monitoring can occur either before or after production. Such monitoring triggers what are called post- and pre-articulatory repairs (Levelt, 1983, 1989). However because of difficulties in defining and reliably identifying a repair which takes place before articulation (and for which, therefore, no tangible evidence exists), I will make a different distinction and introduce the notion of the 'Mid-Articulatory' repair, i.e. repairs where the interpreter has already uttered parts of the word, thus providing tangible evidence of the existence of the repair. Apart from this modification, Levelt's (1983, 1989) categories of repairs will be used and adapted to the purpose of this study in simultaneous interpreting.

A model of interpreter behaviour is incomplete without a reception component, to complement the speech production component. Therefore, the same chapter will look at speech reception in communication by focusing on a pragmatics approach. Speech comprehension is not simply the reverse of the speech production process. Consequently, I will use theories derived from psychology and cognitive science in order to shed light on the understanding of speech. Relevance theory or the idea that communication between people is based on the capacity a person has to infer the "communicator's intention from evidence provided for a precise purpose" (Sperber and Wilson, 1987: 699) will prove useful. Moreover relevance theory posits an optimization of resources in communication – both production and reception; in other words, achieving maximum effect while incurring minimum processing effort. We will see whether we can apply this notion to our corpus of repairs in simultaneous interpreting. Furthermore, the notion of relevance theory will need to be applied to the translation process and therefore I will focus on what Gutt (1991: 188) calls "the interpretive use of language" which tries to achieve "interpretive resemblance" with the source text.



A corpus-based analysis needs to be grounded in research carried out by scholars in interpreting research. Therefore, the third chapter will review several models of interpreter behaviour. First, I will describe the simultaneous interpreting process and apply the notion of repairs to simultaneous interpreting. Then, I will look at the literature published on interpreting: from early studies to psychological experiments and various interdisciplinary approaches taken by different scholars in order to find out more about their account of the interpreting process, and more specifically their view on the existence of a monitoring function and repairs in interpreting. Finally, I will describe some influential models of the simultaneous interpreting process, starting with the interpretive theory of the ESIT school (see Seleskovitch 1968, Lederer 1981), information-processing or processing capacity approaches (see Gerver 1976, Moser 1978, Gile 1995b) and a cognitive-pragmatic approach (see Setton 1999). Various features from each of these models, together with insights from the theoretical models of speech production and reception, contribute to a proposal for a model of the simultaneous interpreting process appropriate for the analysis of repairs.

The last chapter then applies this model to the analysis of the authentic corpus described above. A short quantitative analysis is presented in order to give a general overview of the spread of the different repair categories analysed in the study and shows some trends emerging from the corpus. Not only do I present the differences between categories but I also show the heterogeneity between interpreters. The main part of the analysis is of a qualitative nature because, as we will see, some repairs do not simply fit into one category but could be found in more than one. The study limits itself to the occurrence of repairs. It will not take into account so-called 'non-repairs', in other words instances when the interpreter does not correct his/her output. For reasons of space, it is not possible to present the analysis of all examples found in the data. Therefore, a number of representative examples will be selected for detailed analysis while others will only be presented in order to substantiate the main repair being analysed under a particular category. The analysed repairs are divided into different categories adapted from Levelt (1983, 1989). The selection of the main examples will help to shed light on the reason why interpreters repair. I will look for evidence of trends and attempt to match the interpreters' moves with the co-text and context.

All of this will help in providing further insights into this complex act of communication. An interdisciplinary approach which combines insights from psycholinguistics and neurolinguistics on speech production with a pragmatics-based approach of speech production and reception will prove invaluable to better understand the whole process. The proposed model will help to account for evidence of monitoring and repairs in simultaneous interpreting and the use of an authentic corpus will be a useful tool to shed light on the interpreter's deployment of processing capacities. This study will further scholarly work and illuminate an issue which has been largely neglected so far.



## Chapter 2      Models of Speech Production and Reception

Speech production is a complex area of study, indeed it is considered as being even more difficult to research than speech reception (Kess, 1992). Devising experiments in order to gain access to the speaker's black box is recognized as being more complex than observing different behaviours in speech comprehension. In this chapter, we will focus on research carried out in psycholinguistics and neurolinguistics, which propose models of speech production and reception.

### 2.1 Speech production

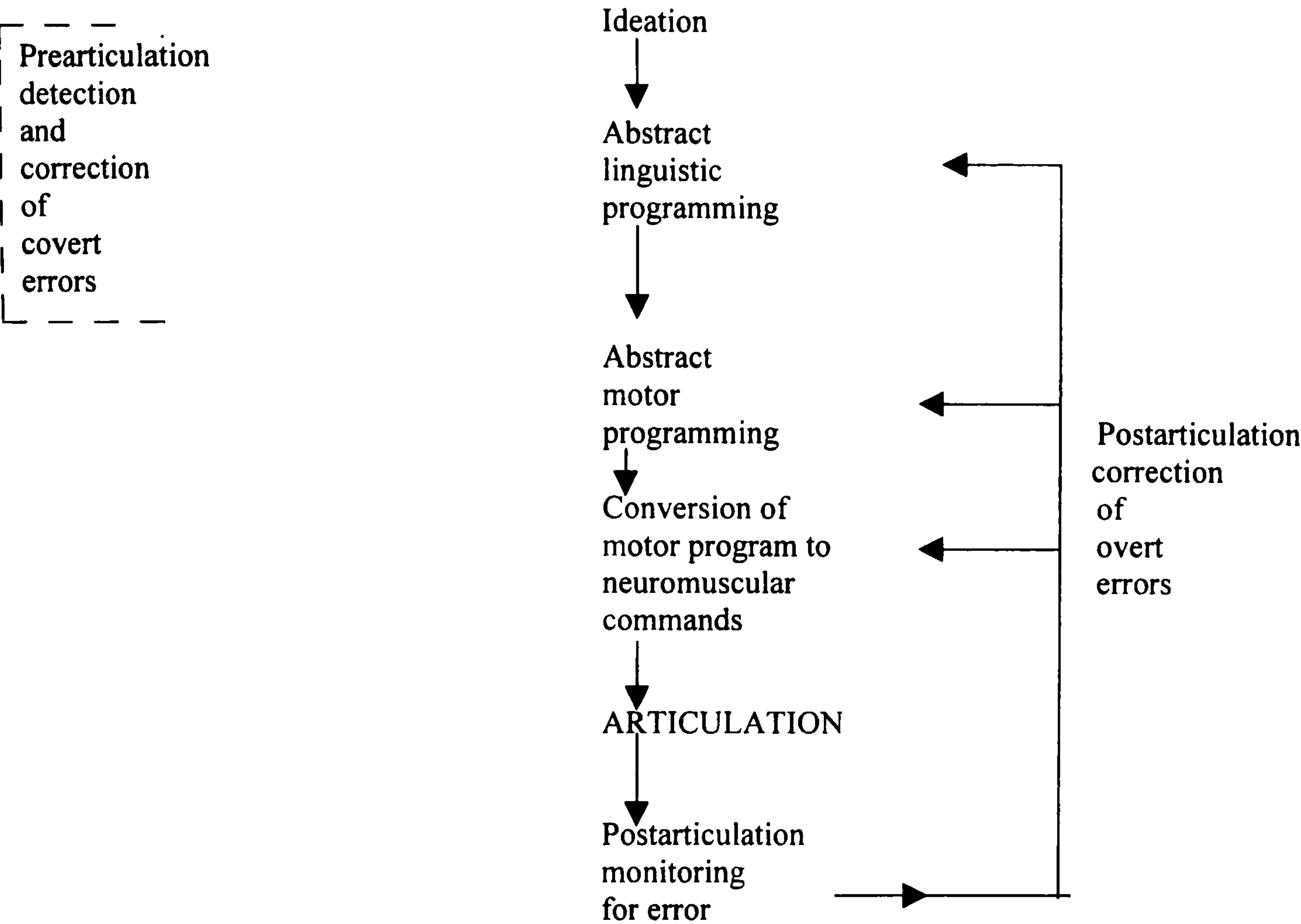
Scholars have used the production of slips of the tongue (Nooteboom, 1969; Fromkin, 1971; Laver, 1973, 1980; Garrett, 1975; Norman, 1981; Dell, 1986), spoonerisms (Mac Kay, 1970; Motley *et al.*, 1983) and other disfluencies in order to gain access to the inner mechanisms of speech production. In this section, we will present three different models, which show that speech production proceeds in different stages.

Laver (1973) developed a neurolinguistic model of speech production based on the study of slips of the tongue in spontaneous speech. He proposed a four-function neurolinguistic model with the following chief functions:

- a) ideation (i.e. the initial idea the speaker intends to communicate, this contains the approximate semantic content of the verbal message)
- b) neurolinguistic program-planning (i.e. the 'lexical items and grammatical arrangements with their associated phonology are selected from long-term storage using criteria of semantic appropriateness'). It is possible that more items are selected from storage than finally used in the neurolinguistic program. This function is also called 'the Planner' (*ibid.*: 136)
- c) myodynamic execution (i.e. the contractions and movements of the muscles of the speech organs). This is the 'utterance stage'.

d) monitoring (i.e. 'the neural function of detecting and correcting errors in the neurolinguistic program') (*ibid.*: 138).

Laver refined this first model in 1980 and proposed a flow chart, reproduced here as Figure 1:



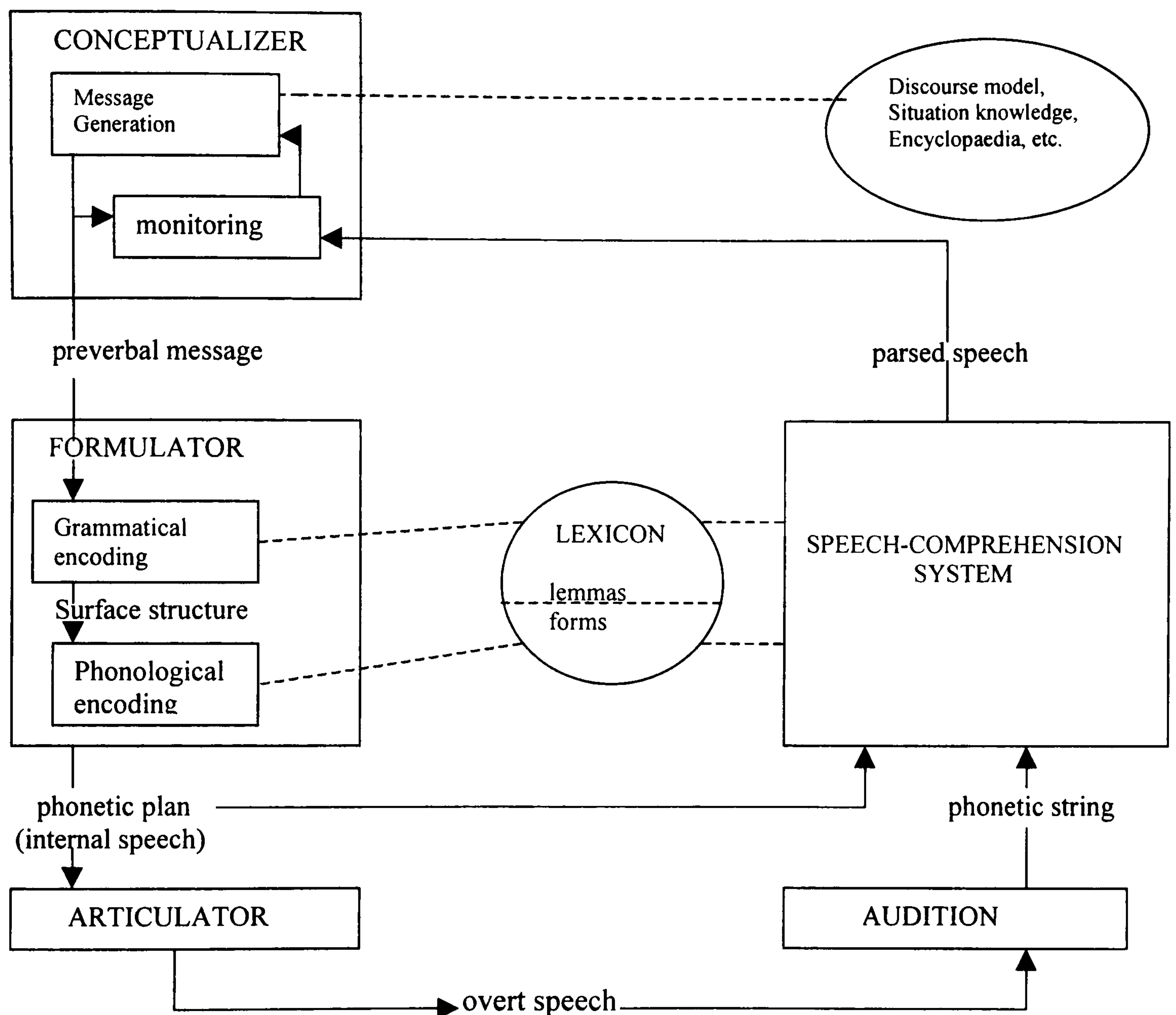
**Figure 1:** *Laver's schematic representation of neurolinguistic functions (adapted from Laver, 1980: 290)*

In the revised version reproduced above, Laver adds two functions: the 'abstract motor programming' and the 'conversion of motor program to neuromuscular commands'. The first addition refers to the medium used, in other words, whether the person is going to speak or write. The second one sends commands to the articulator and is partly contained in the 'myodynamic execution' of the first model. In this revised version, he also adds a



'postarticulation correction of overt errors'. For our own study, this further addition seems of interest. Otherwise, the flow chart includes the functions described in the 1973 model.

Levelt (1983, 1989), who proposes a psycholinguistic approach to speech production, adopts a slightly different view. He divides the speech production process into three different stages and proposes a flow chart reproduced here as Figure 2.



Key: "boxes represent processing components and circles and ellipses represent knowledge stores" (Levelt, 1989: 9).

**Figure 2:** Levelt's speech production model (adapted from Levelt, 1989: 9)

Levelt suggests the existence of three main stages:

- a) conceptualization
- b) formulation
- c) articulation

The first stage comprises a nonlinguistic conceptualization in which the basic topics to be expressed in an utterance are selected and represented in a preverbal, propositional code. In the planning of preverbal messages two stages can be distinguished: macroplanning and microplanning. Macroplanning means that the speaker develops communicative goals and retrieves the information needed to express these goals. Microplanning on the other hand is a conceptual planning activity, for example the "planning of an informational perspective for an utterance" (Levelt, 1989: 5) . The speaker can also attend to his/her own production, i.e. "monitor" his/her speech (Levelt, 1989: 5-9) (see 2.2 for further discussion on the 'monitor'). The speaker also has access to two kinds of knowledge: a procedural and a declarative knowledge. The procedural knowledge involves building an assertion of a given proposition the speaker wishes to make and can be contained in the working memory. The declarative knowledge means the speaker's knowledge of the world and himself, which is contained in the long-term memory. Although both types of knowledge are not mentioned in the above Figure 2, Levelt suggests that the procedural knowledge is contained in the rectangular shapes, i.e. the processors themselves and that the declarative knowledge is to be found in the circles (Levelt, 1989: 9-10).

The second stage he called a formulation stage, which provides the utterance with its linguistic form. The preverbal message is converted into a speech plan (phonetic plan) by selecting the appropriate words or lexical units and applying grammatical and phonological rules. The formulation stage can be divided into two substages: first, a lexico-syntactic stage (grammatical encoding) where the appropriate words (or lemmas)<sup>2</sup> are picked from the mental lexicon and ordered syntactically; and second, a morpho-phonological stage, also

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<sup>2</sup> Lemmas have been defined in various ways. Some scholars see them as: "abstract lexical items not yet containing any sound information (Kempen and Huijbers cited in V.Wijk and Kempen, 1987: 404), others have defined them as information about an item: "the lexical information which is active in the first phase (...)"(Levelt and Schriefers, 1987: 397) or even: "aspects of a word's stored information" (Levelt, 1989: 6).



called a 'sound form stage' (phonological encoding), where the sound structure of words is elaborated (see De Bot, 1992: 4). The result of this stage is the 'phonetic plan', which is not yet synonymous with 'overt speech' (Levelt, 1989: 12). Finally, the third stage involves the articulation of speech movements and the production of audible speech (see Blackmer and Mitton, 1991: 173; Postma and Kolk, 1993: 473). The result of this stage is 'overt speech'.

In Figure 2 above, Levelt also suggests the existence of a 'speech-comprehension system', which has access to both 'lemmas' and 'forms'. Although the 'speech comprehension system' comprises other sub-components (see Levelt, 1989: 13), Levelt restricts himself to the simple box contained in Figure 2 mentioned above. The overt as well as the inner speech go through the speech comprehension system and produce the so-called 'parsed speech'<sup>3</sup> which is sent to the 'monitor'. An important aspect in Levelt's model is that the 'conceptualizer' does not have access to the information contained in the mental lexicon. There is no possible feedback from the formulator to the conceptualizer, or from the articulator to the formulator. In other words, the model is strictly modular. On the other hand, however, Poullisse (1993: 179) suggests that "lexical information could be stored in a buffer until it is encoded; the time during which the information is stored may be long enough to allow an alarm signal to go to the monitor in the conceptualizer". Although they are not mentioned in his schematic representation, Levelt assumes the existence of some kind of buffer to store the 'intermediate representations', in other words the "preverbal message, the surface structure and the phonetic plan" (Levelt, 1989: 28). The possible existence of a 'buffer' has implications for the study presented in this thesis and will be considered when we come to the analysis stage (chapter 4 below).

Even if Laver and Levelt use different terminology to describe the speech production model, their accounts are quite similar. However, Levelt's 'conceptualizer' seems to include Laver's 'ideation' as well as part of his 'neurolinguistic program-planning or abstract linguistic programming' stage. Laver's additions of an 'abstract motor programming' and a 'conversion

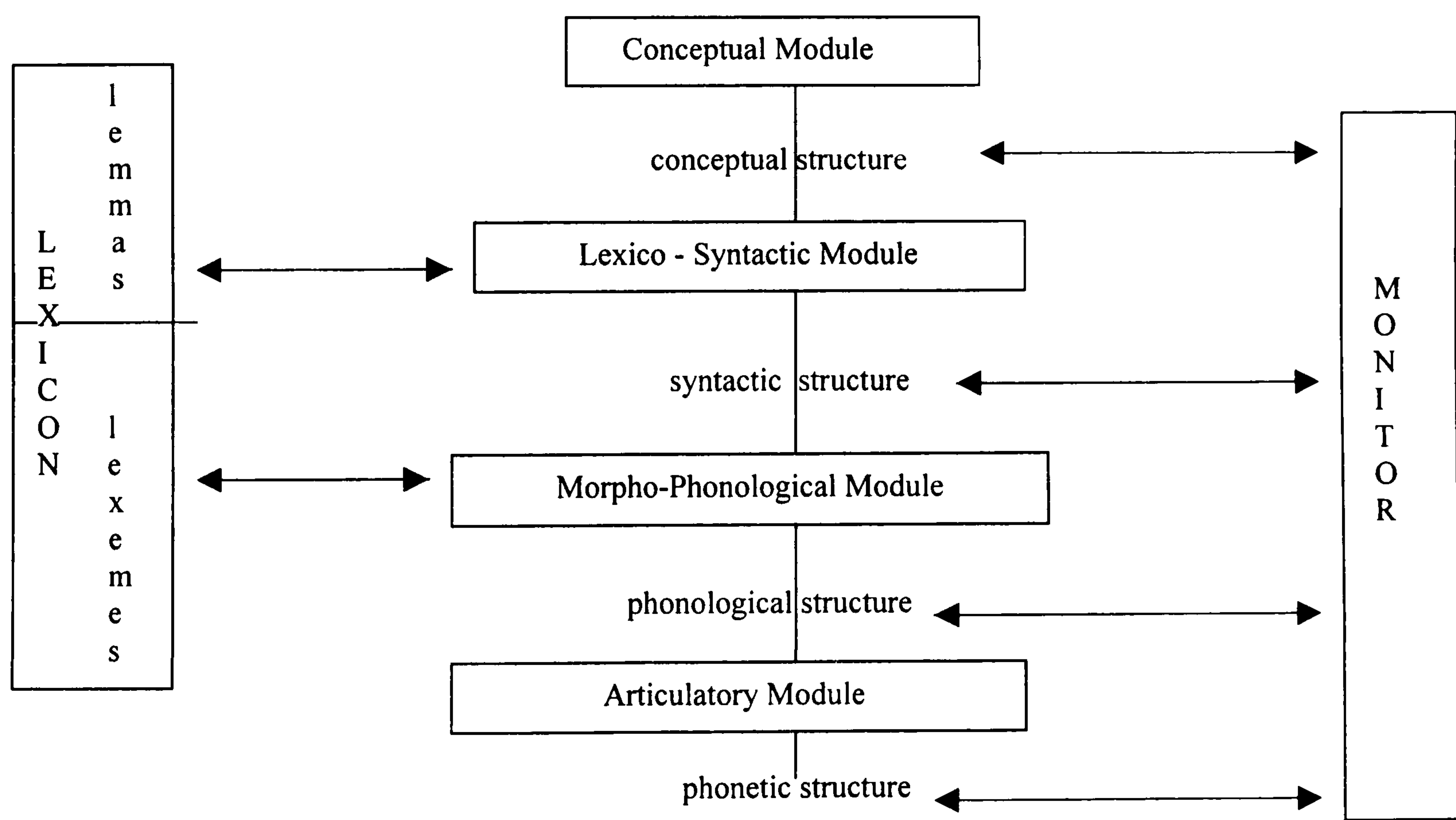
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<sup>3</sup>"A parser has access to information about how words can be grouped in a particular language, (...) and it makes use of this knowledge to determine the structure of particular sentences that it encounters"; (Garnham, 1985: 6) or "the parser is a cover term for the sum total of procedures available to a language user for understanding spoken language (Levelt, 1983: 49).



of motor program to neuromuscular commands' (Laver, 1980) are not specifically included in Levelt's account but the main point where both authors differ is the question of the monitor. Laver suggests a separate monitor at the end of the process as well as a possible monitor during the 'ideation' and the 'neurolinguistic program-planning' stage (Laver, 1973: 136). Levelt, on the other hand, places the monitoring function inside the conceptualizer. He suggests that the monitor can revise both the inner and the overt speech (see chapter 2.3 below for further discussion).

The third model of speech production useful for the research presented in this thesis is based on the work done by Garrett (1975, 1980). Van Wijk and Kempen (1987) developed this psycholinguistic model of speech production for spontaneous speech (see Figure 3), which entails four different phases or so-called 'modules'. All of these modules, they argue, have access to the mental lexicon and are continuously watched by a central monitor.



**Figure 3:** *Van Wijk and Kempen's speech production model (adapted from Van Wijk and Kempen, 1987: 404)*



The model proposed by Van Wijk and Kempen includes:

- a) a conceptual module which prepares the meaning contents (nonlinguistic or language-independent to a large extent);
- b) a lexico-syntactic module which converts conceptual input into syntactic form by building functional linguistic structures; their terminal nodes are called lemmas and do not contain any sound information yet;
- c) a morpho-phonological module which retrieves and processes the phonological forms associated with the lemmas; and
- d) an articulatory module which transforms the phonological representation of an utterance into a phonetic one which controls the activity of the speech organs.

Van Wijk and Kempen's model contains a 'conceptual' element like Laver's and Levelt's models. After the conceptual element, however, the formulation stage is divided into two different parts, i.e. 'the lexico-syntactic' and 'the morpho-phonological' modules. These could be compared with Levelt's 'formulator'. However, unlike Levelt, who sees the 'phonetic plan' as the output of the 'formulator', or in other words the equivalent of 'internal speech', Van Wijk and Kempen present evidence in support of their claim that the 'phonetic structure' is the output of the 'articulatory module', i.e. the equivalent of 'overt speech'. Moreover, Van Wijk and Kempen propose a monitor function which has access to the output of each single module. This, in turn, could correspond to Laver's monitoring functions (see chapter 2.3 for discussion on the 'monitor function'). It is also important to note that the three stages, i.e. conceptualizer, formulator, articulator, do not come one after the other but are incremental (Kempen and Hoekamp, 1987: 203). In other words, these three stages build upon each other.

As can be seen: all three models of speech production discussed above contain a non-linguistic phase. Laver (1973) calls that phase 'ideation', Levelt (1983, 1989) talks of a 'conceptualizer' and Van Wijk and Kempen (1987) refer to the 'conceptual module'. During this first phase, the idea or the concept to be formulated is initiated. All three models describe the second phase either as the 'neurolinguistic program-planning/abstract linguistic



programming' (Laver), 'the formulator' (Levelt) or 'the lexico-syntactic and the morpho-phonological modules' (Van Wijk and Kempen). Laver's 'neurolinguistic program-planning' phase has access to 'the initial idea, lexical and grammatical storage and the phonology'. As we have seen, he also adds a phase where the speaker decides which medium will be used, an 'abstract motor programming' phase and a phase where the motor program will be converted to 'neuromuscular commands'. Similarly, Levelt's 'formulator' comprises two phases, a 'grammatical encoding' which has access to a mental lexicon in order to retrieve lemmas and make the syntax available, and a 'phonological encoding' which has access to the lexical forms. Van Wijk and Kempen also divide their second phase of speech production into two and propose a 'lexico-syntactic module' which terminates in lemmas and a 'morpho-phonological module' which retrieves and processes lexemes. Finally, it is worth noting that all three models also contain a phase of 'articulation' of speech (Levelt, Van Wijk and Kempen) or 'myodynamic execution/articulation' (Laver).

The part of the speech production model which divides the authors is therefore the so-called 'monitor'. Even if Laver's monitoring function appears to be a separate entity at the end of the speech production model, he also proposes multiple monitors, which are part of the production system (see section 2.3 below for discussion). Levelt prefers to include the 'monitor' in his 'conceptualizer' while Van Wijk and Kempen suggest a link between the output of each 'module' and a 'central monitor'. All three models (Laver 1973, 1980; Levelt 1983, 1989; Van Wijk and Kempen, 1987) propose a different position and function for the monitor. As the monitor is a central concern of this thesis attention will now turn specifically to that; but first, it is worth noting that all of these scholars seem to focus on phonetics as one major aspect of their respective models; that is not going to be the main element of the study presented here. Another important feature is the oversight of the monitor function after the output in Levelt's model. Even if Levelt foresees a monitoring of overt speech (see Figure 2) the articulated speech still has to go through the audition stage as well as the speech-comprehension system in order to reach the monitor. Meanwhile, Laver and Van Wijk and Kempen propose a monitoring function after articulation (see Figures 1 and 3).



## 2.2 Monitoring

During the language production process, errors or flaws can occur. This, in turn, can hinder comprehension and can be prevented by the so-called "monitoring process" also referred to as the "internal editing mechanism" (Fromkin, 1973: 16). In this section, we will review the different approaches to the monitoring function. As stated earlier, scholars tend to disagree on the place of the monitor in speech production.

Laver (1973) points out that monitoring is only "one of the various functions in the brain's control of acts of speech performance" (Laver, 1973: 132). He makes a distinction between the 'Planner' and the 'Monitor'. While the former looks after the idea before the utterance stage, the latter is concerned with the utterance as such. Laver foresees a monitor at the end of the speech production process as well as multiple monitors that are part of the whole process. According to him, the monitoring process has four sub-functions:

- a) peripheral reception (the most important one being the auditory system);
- b) decoding (production and reception seem to be using the same neural units and access is also needed to lexical and grammatical storage in order to assess the linguistic orthodoxy of the program);
- c) evaluation (comparison of the message with lexical, grammatical and phonological rules);
- d) action (i.e. the decision whether or not to continue the speech process)

(adapted from Laver, 1973: 139-140).

Laver (1973: 134) does not think that finding and correcting the error is "the monopoly of the monitoring function, but an integral characteristic of all the brain's processes for constructing and controlling speech-programs". He also concludes that both the Planner (i.e. 'neurolinguistic program-planning' stage) and the Monitor could be seen as "different manifestations of a common major function" (Laver, 1973:141). In addition, he makes a distinction between "monitoring for intention and meaning of what is spoken and monitoring for linguistic deviancy" (Levelt, 1983: 51). According to him, "conscious awareness is not



necessary for monitoring" (Laver, 1973: 141). Nooteboom (1980: 94) who worked on the study of slips of the tongue, makes a similar statement. He notes from the outset that even if there is some kind of mechanism used to correct speech errors, the speaker is not "necessarily aware of either having made an error or correcting it". However, if the speaker recognizes an error, he will stop speaking depending on two 'competing forces', i.e. on the one hand, he will want to correct the error immediately and on the other hand, he will want to complete the word he is in the process of saying. This adds the rather interesting possibility of an unconscious sub-component during speech monitoring.

Levelt, however takes a different stance on the monitoring function. On the basis of his psycholinguistic speech production model, he (1983, 1989) suggests three monitoring processes which occur (i) during conceptualization, (ii) after formulation but before articulation and (iii) after the articulation of the message. Specifically, he notes that monitoring can occur during conceptualization, that is the speaker checks the pre-verbal message for appropriateness (this phase is called "appropriateness monitoring" by Blackmer and Mitton, 1991). Levelt explains that "the messages usually 'pass through' working memory, and they will stay available for some time for comparison with the actual speech output" (Levelt, 1983: 47). He also suggests that monitoring can occur after formulation but before articulation, which is the equivalent of 'an inspection of the articulatory plan'. In this case, the internal speech goes through the speech comprehension system and into the monitoring function in the conceptualizer. Finally, he argues that monitoring can take place after the articulation of the message, where speakers can hear their own speech and use a so-called "external, auditory loop" (Postma and Kolk, 1993: 474). The overt speech goes through the audition stage, into the speech-comprehension system and to the monitoring function.

Levelt (1983: 50) summarizes his arguments on the monitoring function by explaining: "(...) the self-produced inner or overt speech is perceived, parsed and checked with respect to intentional and contextual appropriateness, agreement of intended and delivered message, and linguistic correctness".



Postma and Kolk (1993) add however that there could also be two additional possibilities to Levelt's three modes of monitoring:

- a) "the feedback related to the actual speech movements (i.e. the 'efferent, proprioceptive and tactile signals', see Borden, 1979; Lackner and Tuller, 1979 as quoted in Postma and Kolk, 1993: 474 and see Figure 4 below);
- b) the monitoring of the linguistic processes within the formulator (i.e. the retrieval and syntactic ordering of lemmas, see Laver, 1973, 1980; Van Wijk and Kempen, 1987 as quoted in Postma and Kolk, 1993: 474)".

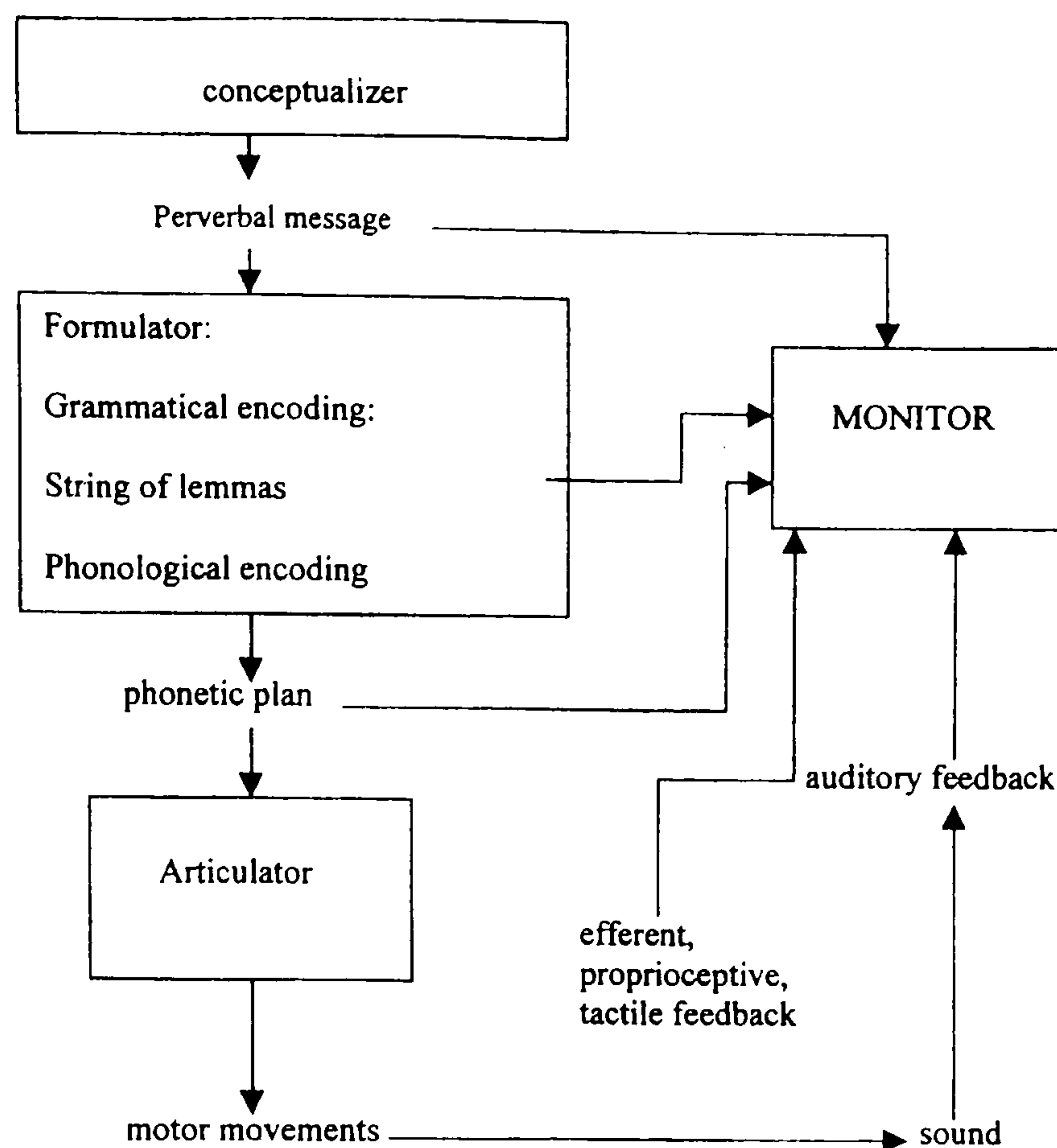
According to them, Levelt may have ignored their first addition because he wants to "let the monitor work with information it receives from the speech decoding or comprehension system" (Postma and Kolk, 1993: 474). He might object to the second addition they make because it forms the so-called 'production theory of monitoring', in other words, when the speaker has direct access to particular components of the production process (for a more detailed account, see section 2.3.2).

Postma and Kolk (1993) propose a diagram (Figure 4) to elaborate on the monitoring routes and add the components mentioned above.

Postma and Kolk (1993: 476) summarize it as follows:

"Although there is some dispute on which information sources can be monitored and which not, most researchers seem to agree upon the possibility of prearticulatory error detection; that is, errors can already be detected before they are overtly produced".

Levelt's account of the monitoring function is in sharp contrast with Laver's. As already stated, however, we shall make the distinction between different theories of monitoring in the next section and will leave such detailed critique until then (see 2.3 for further details).



**Figure 4:** *Postma and Kolk's monitoring routes (Postma and Kolk, 1993: 474)*

Brown and Yule (1983: 4-5) add another dimension when they say:

"the speaker must monitor what it is that he has just said, and determine whether it matches his intentions, while he is uttering his current phrase and monitoring that, and simultaneously planning his next utterance and fitting that into the overall pattern of what he wants to say and monitoring, moreover, not only his own performance but its reception by his hearer".

In this definition, Brown and Yule point to multi-tasking in speech production, even before the interpreting dimension is added. They also stress the importance of the 'speaker's intentions', the purpose of the monitoring function and the 'reception by his hearer'. Even if this last point is not the main focus of our research, it seems worth noting its importance for a study of simultaneous interpreting.



Postma and Kolk (1993: 473) give the following definition of 'speech monitoring':

"(...) the name attached to the control process that checks on the correctness of the speech flow. Its prime purpose is to detect and correct speech production errors, that is, parts of the speech program or of the actual speech output that do not agree with the speaker's communication purpose or with his/her general linguistic knowledge and standards".

In this definition, Postma and Kolk are concentrating on the aspect of error correction. As we will see, the monitoring function will not be considered solely as a function to correct mistakes. Moreover, two aspects of this definition should be noticed. First, they focus on the control of the 'speech program', in other words internal speech and the monitoring of the speech output. Secondly, they also stress the control of the 'speaker's communication purpose'. Both of these aspects will be further developed in this study.

The following definition of the speech monitor also focuses on the different stages in controlling one's utterance: "The speech monitor is the speaker's own inspection device, which enables him to check the utterance he is about to produce, is producing or has produced" (Van Hest *et al.*, 1997: 87). In this definition, the temporal aspect is noticeable, which allows for different stages in the monitoring of speech. This concern with timing has some resonance with Levelt's definition as he argues that monitoring occurs before as well as after articulation (see also Blackmer and Mitton, 1991).

Regarding the monitor proper, Levelt (1983: 49-50) elaborates on its two functions:

"The first one is a matching function: it compares parsed aspects of inner and outer speech with (i) the intentions, and the message sent to the formulator, and (ii) criteria or standards of production. (...) The second function is to create instructions for adjustment. If some mismatch is detected which surpasses certain criteria, the monitor makes the speaker aware of this or in other words: an alarm signal is sent to working memory".



The terms 'mismatch' and 'adjustment' used in this definition seem to be more appropriate to account for the subject of our study than 'error correction'.

In the speech production model proposed by Van Wijk and Kempen (1987), the monitor is placed within the production system, but outside of the production components and oversees each one of them. The monitor checks incremental output from the four different stages of production and it has several functions:

- a) observing the flow of information between the modules (Van Wijk and Kempen, 1987: 405);
  - b) checking the output of the modules for inappropriateness;
  - c) preparing a syntactic summary, sending new fragments from the conceptualizer to the formulator (see Kempen, 1978 for details on monitor functions)
- (adapted from Blackmer and Mitton, 1991: 177).

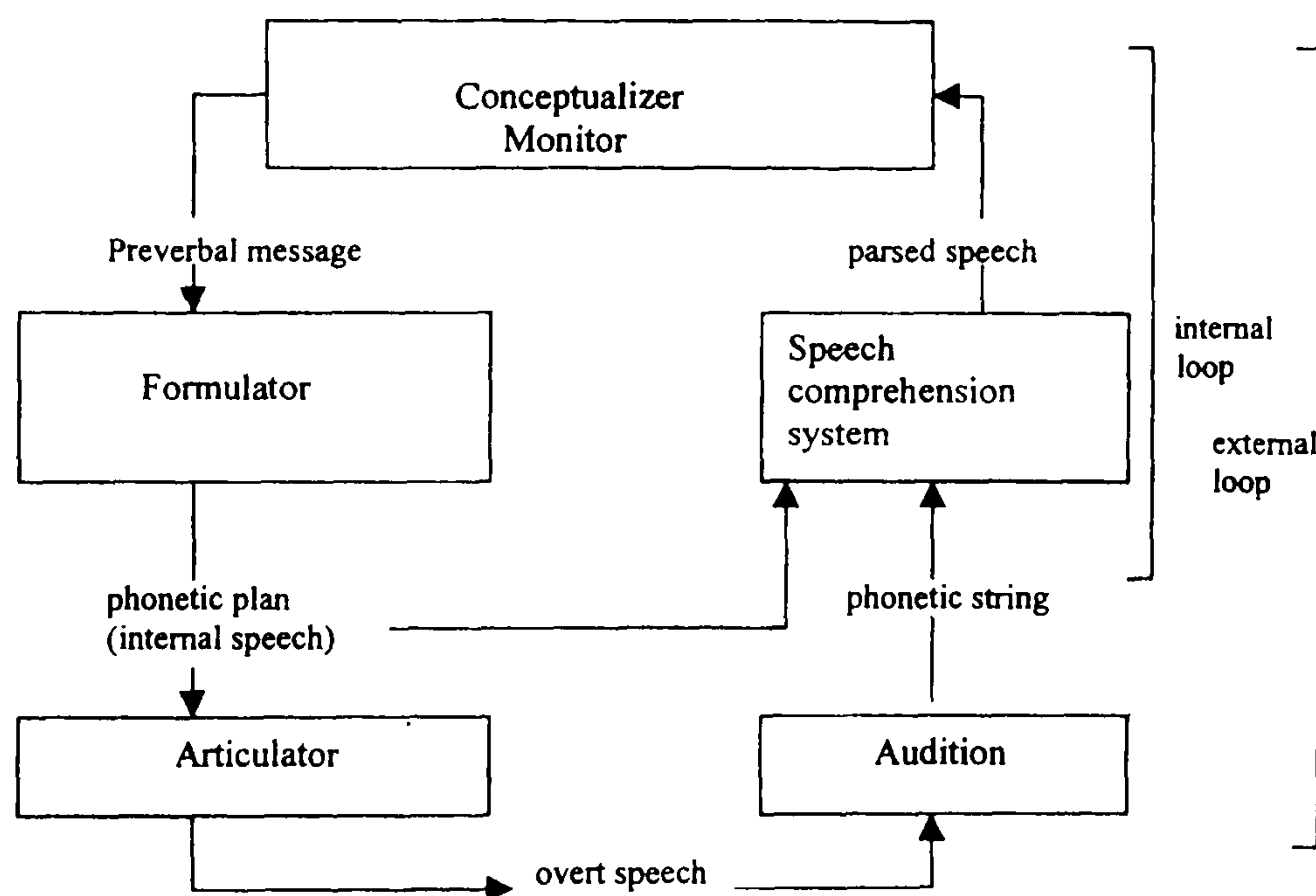
In Laver's model (1973, 1980) by contrast, the planner attends to pre-uttered speech and the monitor looks after the uttered speech. Laver suggests, however, that both are part of a common major function. Levelt's monitor by comparison is placed in the conceptualizer and does not have access to the formulation stage. According to Postma and Kolk (1993: 473), Levelt located the monitor in the conceptualizer, which "initiates the generation of an utterance, also checks the utterance's correct progress" (see Figure 2). For Levelt, the monitoring function goes through the speech comprehension stage rather than the speech production phase (Malmkjaer and Anderson, 1991: 365). He states that the speaker can monitor messages 'before' they are sent to the Formulator, "considering whether they will have the intended effect in view of the present state of the discourse and the knowledge shared with the interlocutor(s)" (Levelt, 1989: 14). According to Levelt, the conceptualizer does the main part of the work and therefore the monitor function does not need to be a separate one.

Levelt might also have put the monitor in the conceptualizer because he states that conceptualizing and monitoring are conscious processes, which the speaker can control,



whereas formulating and articulating are rather automatic and speakers have very little control over them (Levelt, 1989: 21). This would mean that flaws which occur in speech and are not corrected may be left intentionally alone. In other words, the speaker is conscious of the disfluency and decides not to change anything. There is, of course, also the possibility of the speaker not detecting the flaw or, as Nooteboom (1980: 89-90) puts it, "not necessarily being aware of either having made an error or correcting it".

Even more usefully, Levelt distinguishes between two separate monitor loops: an internal loop and an external loop (see Figure 5). The internal loop is used "to attend to one's own internal speech before it is uttered" and the external loop can attend to one's "self-produced overt speech"(Levelt, 1989: 469).



**Figure 5:** *Levelt's dual monitor loop (Levelt, 1989: 470)*

As seen earlier, Laver already suggested the existence of a planner and a monitor. While the former attends to the 'covert editing', the latter looks after the 'overt editing' (Laver, 1973: 142). Generally, the literature on speech production and monitoring agrees on the existence of a pre-articulatory monitoring function (see Berg, 1986b for further details).

Blackmer and Mitton (1991) go further and suggest that there are two different types of monitors: a 'flow-through' and a 'hold-up'. The 'flow-through' monitor "allows further processing of material while checking it" and the hold-up monitor "delays further processing of material while checking it and then can cancel the processing when an error is detected" (*ibid.*: 176). Levelt's internal and external monitor loops can be qualified as a "flow-through" monitor. Laver's final monitor can also be qualified as a "flow-through" monitor while the multiple monitors he foresees in his speech production model can be seen as "hold-up" ones (Blackmer and Mitton, 1991: 176). This distinction between 'flow-through' and 'hold-up' will have a temporal influence on the speaker's possibility of 'checking' or monitoring the utterance. It seems appropriate to suggest that a 'hold-up' monitor would slow down the processing and thus the monitoring of material, while the 'flow-through' would allow for some kind of simultaneity of processing and acceptance of more material, even if it would increase the processing load. This seems to be quite relevant to our study of simultaneous interpreting data and will be returned to at greater length below (see 3.6.6 for further details). Having looked at the monitoring process in some detail, attention now turns to theories of monitoring.

## **2.3 Different theories of monitoring**

There are two main theories of monitoring: the editor and the connectionist theories.

### *2.3.1 The editor theories*

The editor theories suggest that the monitor and/or editor is placed outside the production system and has access to different levels of production (see Laver, 1973; De Smedt and Kempen, 1987; Van Wijk and Kempen, 1987). The editor theories view the monitoring function as akin to that of an editor who views a text and makes amendments from outside.

Levelt, however, although he can be placed within this general set of theories, does not seem completely at ease. According to him, the editor and/or monitor needs to have the same



amount of knowledge as the different components that are being monitored. This results, he argues, in a duplication of knowledge (Levelt, 1989: 468). One way of avoiding this problem, he says, would be to "identify the editor with the language-understanding system" (*ibid.*: 469). Therefore, he suggests the existence of a "double perceptual loop" (see Figure 5 discussed above; Levelt 1989: 470) and he thus proposes a so-called "perceptual theory of monitoring". In this way, he sets up a theory somewhat in opposition to so-called 'production theories' of monitoring. Let us now examine that in some detail.

### 2.3.2 *Production vs. perceptual theory of monitoring*

Laver is in favour of a 'production theory of monitoring' which he says means that linguistic processes can be monitored inside the speaker's 'neurolinguistic program' (Laver, 1973). Van Wijk and Kempen (1987) follow Laver's production theory of monitoring. In their model of language production (see Figure 3) the 'modules' have "access to the mental lexicon and their outputs are continuously watched by a central monitor" (Van Wijk and Kempen, 1987: 404). They argue that the monitor is:

"a supervisory agent observing the flow of information between modules, capable of intervening when certain special events take place. Needless to say, the monitor has no linguistic knowledge of its own and exerts control merely by sending and receiving messages" (Van Wijk and Kempen, 1987: 405).

The production theory of monitoring allows the cognitive processes to be accessible for attention and not only the end results of these processes (Levelt, quoted in Postma and Kolk, 1993: 474). However, the production theory of monitoring is said to have two main weaknesses:

- a) if it is possible to monitor inside a process, it means that knowledge will be duplicated;
- b) the process itself will be significantly slowed down while checking processing material (*ibid.*, 1993: 474).



Although neither theory has been proven, Levelt opts for the perceptual loop theory of monitoring. According to him, there are two ways of detecting the source of the flaw. Either the speaker has "direct access to particular components of the production process" (called 'the production theory of monitoring'), or "the speaker has no access to the component of production, but only to the final result of the process" (called 'the perceptual theory of monitoring', also referred to as 'the perceptual loop theory') (Levelt, 1983: 46). As a result, he says (1983: 41), "(...) speakers have little or no access to their speech production process; self-monitoring is probably based on parsing one's own inner or overt speech". He (1989: 14) also states that:

"The speaker no doubt also monitors messages *before* they are sent into the Formulator (...), considering whether they will have the intended effect in view of the present state of the discourse and the knowledge shared with the interlocutor(s). Hence, there is no good reason for distinguishing a relatively autonomous monitoring component in language production. The main work is done by the Conceptualizer, which can attend to internally generated messages and to the output of the Speech-Comprehension System (...)"

Levelt gives two main reasons to support his choice. First, he says the perceptual theory of monitoring "avoids unnecessary 'doubling' of devices" (Levelt, 1983: 46). He thinks that it is more economical to use "the same capabilities to monitor one's own inner and overt speech". This gives the possibility of analyzing the speech of others as well as one's own. Secondly, he argues that experiments have shown that speakers can access the communicative intention and the final result of their speech, but not the intermediate processes involved in speech production. Levelt emphasizes that the processes involved are fast and happen usually in parallel to each other so that the speaker cannot have access to them (*ibid.* 1983). In order to avoid reduplication of knowledge, Levelt proposes a model where the "monitoring device is just the speaker's language-understanding system" (*ibid.*, 1989: 476)<sup>4</sup>. If the utterance needs

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<sup>4</sup> See Figure 2: Levelt's speech production model (Levelt, 1989: 9).



to go through the speech comprehension system, however, we must question whether this theory can account for fast error interceptions (see Postma and Kolk, 1993: 475).

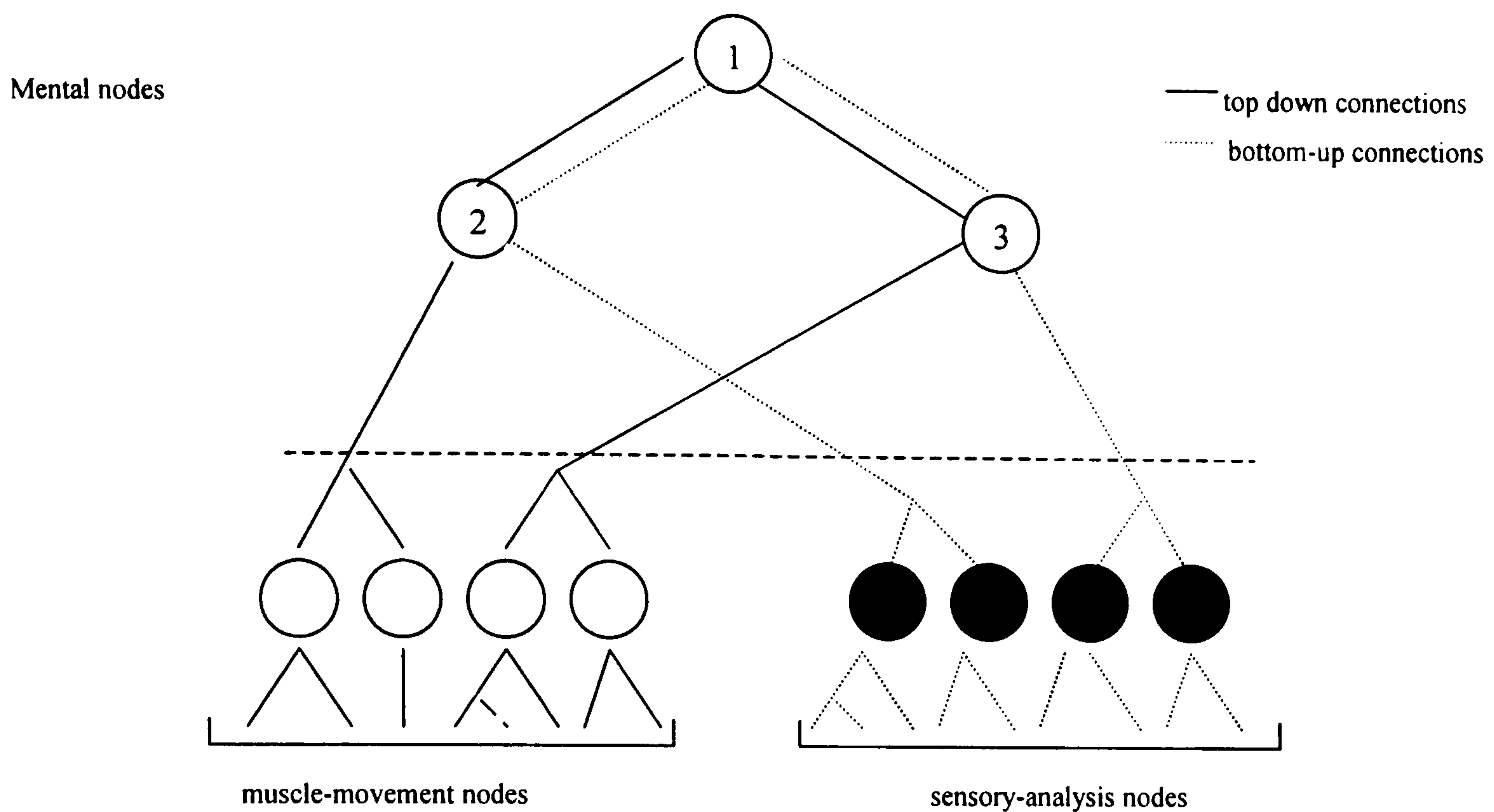
The editor theories of monitoring are interesting. On the one hand, the perceptual theory would suggest that there is a very close link between speech production and speech reception. Consequently, this theory would seem, in part, appropriate for the purpose of our study, as simultaneous interpreting is characterized by a concomitance of fast activities. On the other hand, the weakness of the production theory of monitoring such as the slowing down of operations, could explain the possible breakdown of the monitoring process, for example an undetected flaw. As we are not including instances of 'non-repairs' in this study, it seems appropriate to opt for the perceptual theory of monitoring. However, we will see that this theory will need to be adapted to the purpose of the simultaneous interpreting process (for further details see section 3.6.6).

### *2.3.3 The connectionist theories*

The connectionist theories are also called spreading activation models of speech production (see Dell, 1986). Beaugrande and Dressler (1981: 88) mention the idea of 'spreading activation' and define it as follows: "when some item of knowledge is activated, it appears that other items closely associated with it in mental storage also become active".

Connectionist theories do not foresee any editor or monitor mechanism outside of the speech production system. The control of one's own speech occurs through the same feedback, which is part of the generation of speech. Having observed that speech perception can proceed quicker than speech production (see study by Foulke and Sticht, 1969), Mac Kay (1987) suggests the existence of a node structure theory. According to him, a network of mental nodes (see Figure 6) is responsible both for language production and language comprehension.

The three mental nodes in the upper section of the graph are common to production and perception while the 'muscle-movement nodes' are involved in the articulation and the 'sensory-analysis nodes' are responsible for the audition. The production and the



**Figure 6:** *Mac Kay's node structure theory (adapted from Mac Kay, 1987: 143)*

comprehension system share the layers of different nodes, that is the propositional, conceptual, syllable, phonological and feature nodes represented in the upper section of Figure 6 (Levelt, 1989: 475). In order to become activated, nodes need to be primed.<sup>5</sup> The activated nodes can prime the nodes connected to them and so on. One important aspect of this model is that a node's activation spreads to lower levels as well as to higher ones. When one wishes to say something, the most highly primed node at each level becomes activated.

The notion of 'activated node' for Mac Kay corresponds to Dell's 'current node' in his spreading activation theory (Dell, 1986). Mac Kay (1987: 142) suggests the existence of two feedbacks, the internal and the external one:

"Internal feedback refers to the bottom-up priming that is transmitted to a superordinate node as soon as one of its subordinate nodes becomes activated. When

<sup>5</sup> "Priming refers to a transmission across a connection that increases sub-thresholds activity and prepares the connected node for possible activation (...) priming is a necessary precursor to all perception and action" (Mac Kay, 1987: 9).



a mental node becomes activated during production, it primes its subordinate nodes via top-down connections, thereby enabling activation. (...) External feedback is less immediate and results from sensory analysis of the auditory or other perceptual consequences of an action, which likewise returns priming to the nodes that originated the action".

The connectionist theory of monitoring explains error detection by a process of backward priming, in other words, when a concept is erroneously activated, it spreads its activation back to the concept node which goes through a process of incremental priming. This corresponds to the bottom-up priming of mental nodes (see Levelt, 1989: 476). The detection is done through many distributed processors. This would explain how errors are perceived immediately. In the connectionist theory of monitoring, the existence of connections gives a sense of ongoing process because the connections are primed.

This theory seems to be very economical in so far as it equates the mental networks for the production and understanding of language. Nevertheless, research based on experimental and clinical evidence has shown the contrary, in other words that speech production and speech perception were not one and the same mental network (see Levelt, 1989: 476). Moreover, this connectionist theory does not account for delayed error detection. In the connectionist theories, errors are detected immediately, in other words prior to articulation because the bottom-up priming is always direct and automatic (Levelt, 1989: 477) and unlike editor theories, there is no matching process. However, it seems important to note that Levelt (1983), in his study, has found a majority of delayed errors. This study of simultaneous interpreting data will also reveal some examples of delayed monitoring (see chapter 4). Another difference is that the connectionist theory cannot perceive immediately "the correctness of a correctly produced output" (MacKay, 1987: 171) because of the self-inhibition that comes after the activation of a correct node. Therefore, although the spreading activation theory is interesting, it seems appropriate, for the sake of our study, to opt for the editor theory of monitoring and more specifically, a perceptual loop theory combined with some aspects of the production theory of monitoring, such as the fact that the monitor can be placed outside the speech production process (for further details, see section 3.6.6).



## 2.4 Repairs

In this section, we will look at the logical consequence of the monitoring function: the repair, also defined as "the natural companion of errors" (Van Wijk and Kempen, 1987: 405). It is not until the 1980s that repairs received significant attention in the literature (*ibid.*).

Definitions vary from "errors of speech are not only made, but are often also detected and corrected by the speaker" (Nooteboom, 1980: 87) to "a repair is a term not exclusively applied to devices used to correct errors in what has been said, (...) repairs (...) display that a correction or clarification is being done" (Goodwin, 1981: 140-142).

Although the vast majority of scholars refer to the 'correction of errors or mistakes', Wardhaugh defines repairs as "corrections of some kind of 'trouble' that arises during the course of conversation, that trouble arising out of any one of a variety of factors" (Wardhaugh, 1992: 303). Levelt (1983: 45) also uses the term trouble in the following definition:

"Self-correction in speech results from a complicated interplay of perceptual and productive processes. In order to make a repair, the speaker must, firstly, notice some trouble and interrupt his or her flow of speech, and, secondly, create a new utterance, which takes care of the trouble and its potential consequences for the listener".

Later, in the same article, he adds (*ibid.*: 50):

"When trouble is detected, central corrective action is taken. This action is based on the character of the trouble, the still available parsing results (such as wording and constituent structure of the original utterance), and the estimated consequences for the listener".

It seems important to note that this study will not limit itself to 'errors' in speech. As Schegloff, Jefferson and Sacks (1977: 363) note:



"The term 'correction' is commonly understood to refer to the replacement of an 'error' or 'mistake' by what is 'correct'. The phenomena we are addressing, however, are neither contingent upon error, nor limited to replacement. (...) Repair/correction is sometimes found where there is no hearable error, mistake, or fault (...). Furthermore, hearable error does not necessarily yield the occurrence of repair/correction (...)"

Therefore, the use of the term 'trouble' seems more appropriate for the purpose of this study. Repairing an utterance will be seen as matching the output against fitness for purpose and not just a correction of errors.

Furthermore, it seems also important from the outset to clarify the nature of repairs on which we wish to focus. Scholars made a distinction between self-repairs (or self-initiated repairs) and other-repairs, in other words a repair made by another person (Shiffrin, 1987). This distinction is made in the case of a conversation where the speaker either repairs him/herself or is being repaired by the interlocutor. In this study, we will only use the notion of self-initiated repairs, i.e. "repairs made by speakers on their own initiative, without intervention from their interlocutor(s)" (Van Hest *et al.*, 1997: 85) because simultaneous conference interpreters rarely obtain feedback from the receivers<sup>6</sup>. From now on we shall use the abbreviated form of 'repair' to mean 'self-initiated repair'.

#### 2.4.1 *The repair proper*

Once the monitoring function has detected some trouble, action can be taken and hence generate the production of a repair. According to Levelt (1983: 41):

" Making a self-repair in speech typically proceeds in three phases. The first phase involves the monitoring of one's own speech and the interruption of the flow of

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<sup>6</sup> One exception should be noted here: when the interpreter sees a receiver's reaction in the room and therefore decides to take action and repair.

speech when trouble is detected (...). The second phase is characterized by hesitation, pausing, but especially the use of so-called editing terms (...). The third phase consists of making the repair proper".

Postma and Kolk agree with Levelt and point out that a self-repair arises out of three stages, that is "error detection, interruption or cut-off, and the correction itself" (Postma and Kolk, 1993: 474). Furthermore, the repair can imply the use of an alteration or a repetition of what has been said. The speaker can also use so-called 'editing terms'. The editing expression, or 'editing term' is used after the speaker interrupts the speech and before the repair occurs. Levelt listed some interjections, but, in general, he admits: "not much is known about the use and functions of these terms" (Levelt, 1983: 70).

Mac Kay (1987: 174) proposes two different categories of editing terms, which he calls 'error signals': 'rejection error signals and supportive error signals'. Both categories are based on the nature of the statement. He explains that:

"Speakers usually introduce rejection error signals when the error results in a *factually incorrect* statement, (...). A change in prosody often accompanies these rejection signals (...). However, when the error results in a *factually correct* but inadvertitious statement, prosody remains normal, and a supportive error signal is introduced (...)"

Scholars have studied the occurrence of repairs in order to find out more about speech production. The research carried out is varied and contains some interesting aspects for our own work. In the next section, we will try to describe different theories of repairs.

#### 2.4.2 *Different theories of repairs*

Levelt (1983) worked extensively on monitoring and self-repairs and carried out experiments asking his subjects to describe visual colour patterns. He also told them that their descriptions would be tape recorded so that other subjects could draw the colour patterns



from their descriptions. From these experiments he obtained a very large corpus of spontaneous speech, which he analysed in order to develop theories on monitoring and self-repair. After having studied Nooteboom's results (1980) on the position of cut-offs in speech, Levelt developed the so-called 'Main Interruption Rule'. He gives the following definition: "(Speakers) stop the flow of speech immediately upon detecting the occasion of repair" (Levelt, 1983: 56); or in a later version: "Stop the flow of speech immediately upon detecting trouble" (Levelt, 1989: 478). Levelt further defines the immediacy of detection by explaining that the latency from detection to interruption is short, in other words in the order of 200 milliseconds or less (see Levelt, 1983). It seems important to stress that Levelt found exceptions to his 'Main Interruption Rule'. For example, when the detection of trouble is delayed. He gives the following example taken out of his data: "*Left*, to the pink disk, or right to the pink disk" (Levelt, 1989: 481). In this instance, the speaker repairs 'left' (presented in italics in the above quote) with 'right'.

This 'Main Interruption Rule' theory opens an interesting debate around the temporal aspect of repairs (see Blackmer and Mitton, 1991). The position where the speaker interrupts his utterance to repair it, i.e. the cut-off point, is quite important and could tell us more about the speaker's ability to process his speech production. However, in our own data as well as in these scholars' various experiments, we found instances where the interpreter did not repair the utterance<sup>7</sup>. Could this mean that s/he did not detect the trouble? (for further details, see chapter 4).

In his data, Levelt found that if the speaker restarted at a random place in the original utterance, it was more likely that it would be at a phrase boundary (1983: 75). He also found that the speaker was more likely to detect trouble towards the end of the surface constituents (*ibid.*: 96). Levelt noticed that the interruption could occur immediately after the trouble had been detected or within the trouble itself (called 'immediate cut-offs'). It could also occur later, either after or within a correct word (called 'delayed cut-offs'). He found a majority of instances of the immediate cut-offs and delayed cut-offs, respectively 74 per cent and 66 per cent at phrase boundaries.

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<sup>7</sup> Levelt found that 54% of lexical speech errors were left unrepaired in his corpus (Van Hest *et al.*, 1997: 90).



Levelt used three types of boundaries to see where speakers could interrupt the utterance, that is at a phrase, a word and a syllable boundary. In his first category, he noted that the trouble detection was more important towards the end of a phrase (*ibid.*: 60). As far as the second category is concerned, his results show that a small number of either immediate cut-offs or delayed cut-offs happened at a word boundary (respectively 26% and 13%) which led Levelt to assume that speakers preferred to finish a word (in this case a neutral word) after the detection of trouble. In his third category, that is the study of the syllable boundaries, Levelt found a result of 39 per cent of within-word cut-offs, which does not seem to be a very high percentage (see Van Hest *et al.*, 1997: 91-92). Generally speaking, Levelt's results confirmed his Main Interruption Rule, that is that "speakers stop the flow of speech immediately upon detecting trouble" (Levelt, 1989: 478) but had to make allowances for the "preservation of the integrity of words that are themselves not erroneous" (Levelt, 1983: 96). This shows that Levelt is refining his Main Interruption Rule to include examples found in his corpus where the speaker did not attend to the word which was not flawed. This allowed Levelt to show that the detection of trouble is often delayed and that detection chances are higher towards the end of surface constituents (see Levelt, 1983: 96).

In contrast to this, Berg (1986a) rejects Levelt's Main Interruption Rule. He suggests that there is no direct relationship between error<sup>8</sup> detection and cut-off. According to him, cut-offs often occur towards the end of an utterance because speakers are looking for the most adequate cut-off point and not because, as Levelt would put it, the cut-off mechanism works better towards the ends of phrases (see Van Hest *et al.*, 1997: 93; Berg, 1986a: 208).

Berg's argument is based on a corpus of 4,300 slips of the tongue in which 1,446 phonological errors were all repaired. Unfortunately, Berg's corpus was not recorded and therefore the scientific reliability of the corpus can be questioned. However, he checked 506 instances of within-word cut-offs for lexical bias and found 41 per cent, which were real words and 59 per cent, which were not. He then repeated this experiment with a list of words

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<sup>8</sup> Although Berg uses the notion of 'error' detection, he notes from the outset that it is to be understood in the largest sense of the word, "i.e. to include all kinds of inadvertent behaviours" (Berg, 1986a: 212).

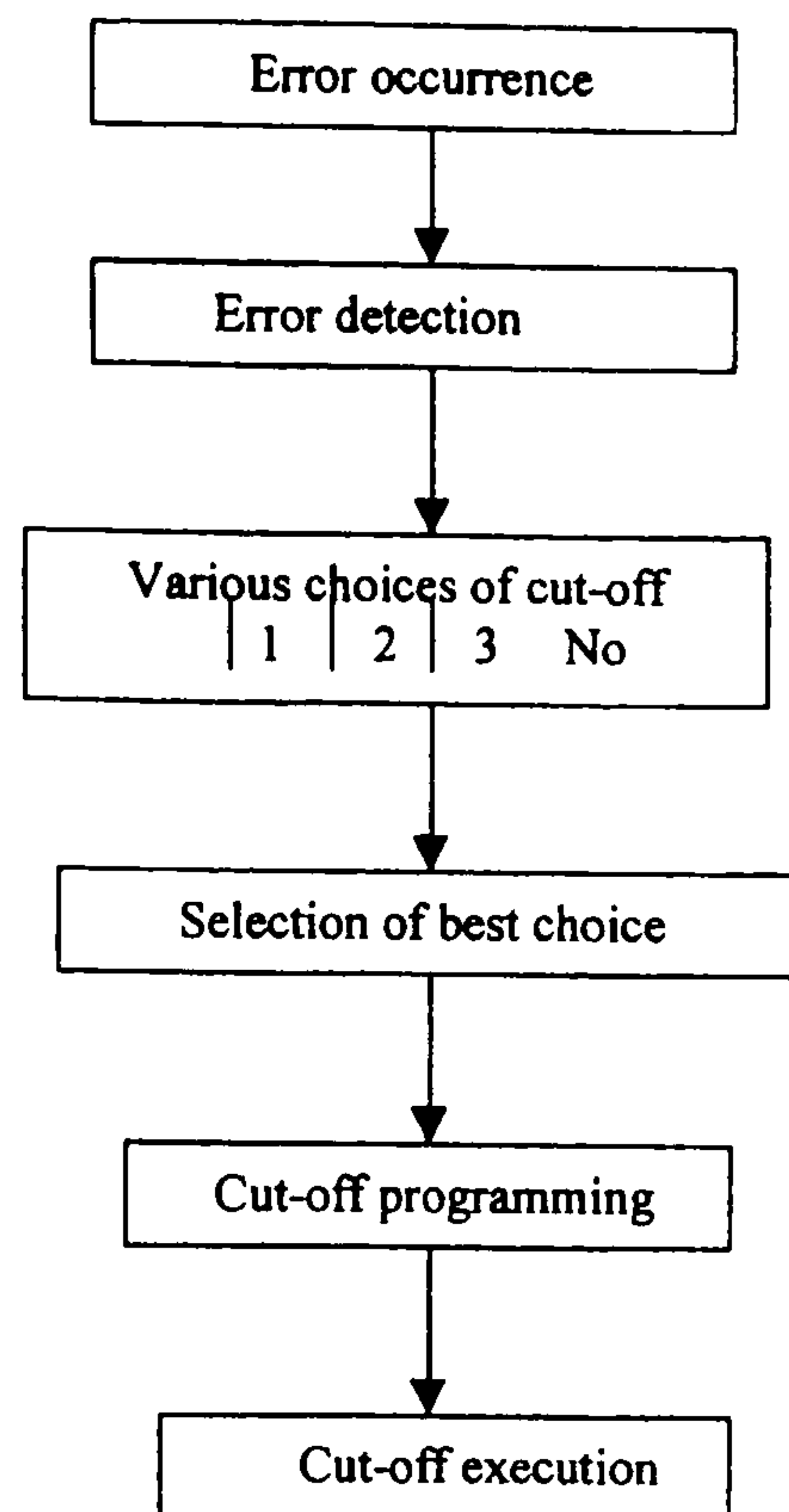


he artificially cut-off immediately after the error had been made. In this instance, he found that some words were cut-off after the first, second, third or fourth segment following the error. These examples were then checked for lexical bias. He found that only 24 per cent of the artificial interruptions constituted a real word. So, in other words there was quite a significant difference between his two experiments as the first result was 41 per cent and the second was 24 per cent. This led him to conclude, as a result, that there was a lexical bias in the within-word cut-off in his data (see Berg, 1986a; Van Hest *et al.*, 1997).

According to Berg (1986a: 197), Levelt's interpretation of Nooteboom's results is erroneous and cannot be reconciled with the 'Main Interruption Rule'. As a result, Berg refutes the rule and calls Levelt's conception of repair 'over-simplistic' and 'inadequate'. According to Berg, Levelt's perception of the relationship between error detection and interruption is one of a 'stimulus-response model'. Taking his argument, he states that the cut-off point is not random but rather 'intelligently placed'. He (*ibid.*: 208) suggests that: "deliberate choices have to be made. Even a decision against cutting-off is conceivable". This leads him to suggest that another stage requires insertion between error detection and the interruption process, as can be seen in Figure 7 below.

Berg suggests that cutting-offs are not automatic, they are "the result of a set of mental operations, i.e. programmed" as opposed to Levelt's theory (*ibid.*: 209). In this model, the speaker has different choices of 'cut-off'. He can even decide not to cut-off at all. Berg claims that cut-offs 'can only be programmed subsequent to error detection' (*ibid.*: 210).

On foot of this, Berg proposes a model (Figure 8 below) to explain how a repair takes place. It is important to underline that his study was based on slips of the tongue, which is quite different from Levelt's corpus which was based on repairs in spontaneous speech production. (Furthermore, although Berg uses the term 'error' in the broadest possible way, in Figure 8, we could replace 'error' with 'trouble', 'erroneous' with 'troublesome', 'error detection' with 'trouble detection' and 'correction decision' with 'rephrasing decision').



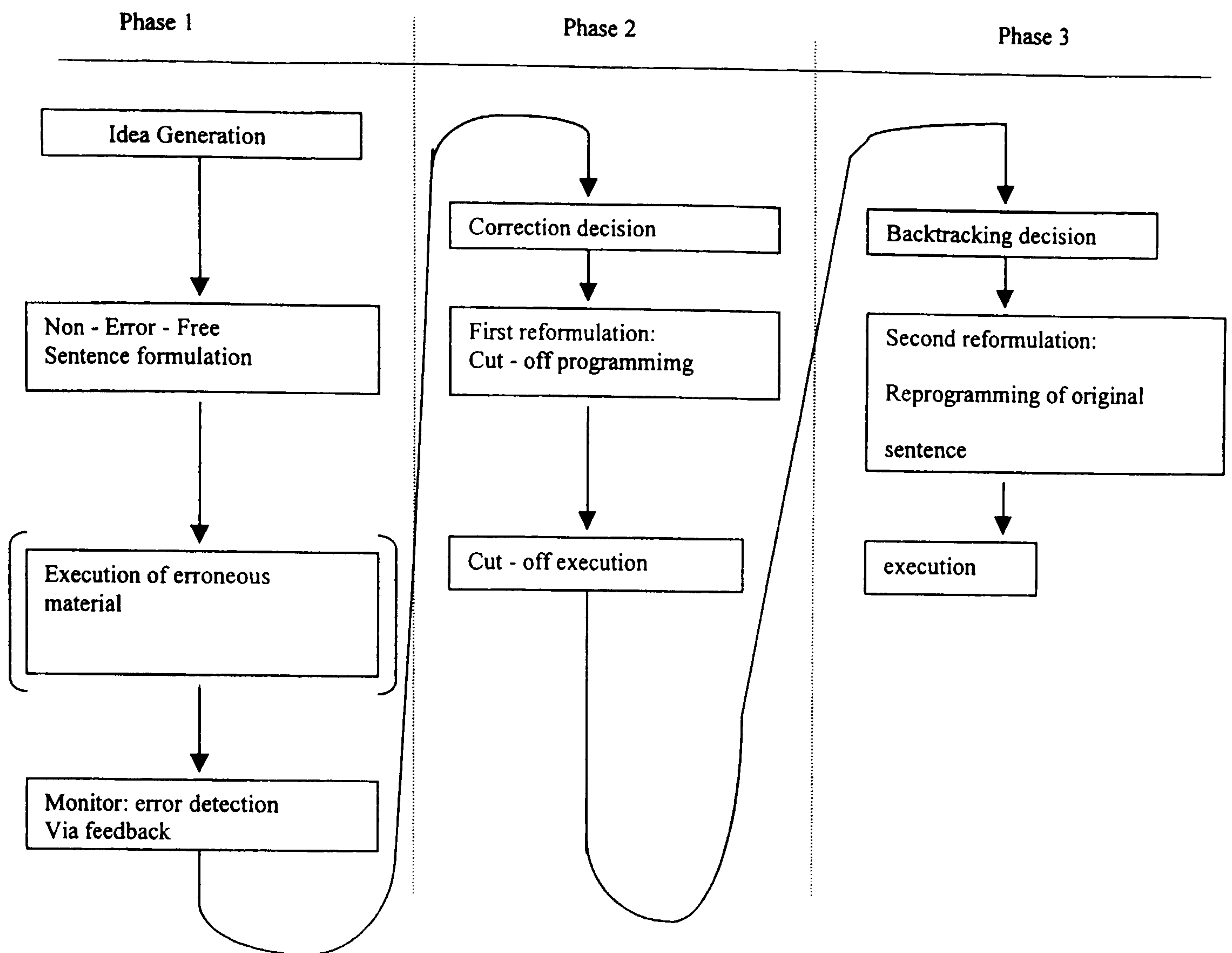
**Figure 7:** *Berg's error detection model (Berg, 1986a: 209)*

Berg explains that the model is an account of both 'covert and overt error repair'<sup>9</sup>, which explains why the box called 'execution of erroneous material' is in brackets. He (1986a: 211) adds that "it is notoriously difficult to represent mental operations spatially". However, this distinction does not seem to be very obvious for us (for further details see 2.5). According to Berg, the model is divided into three stages, which are somehow logically independent and adds that the decision stages are not necessarily successive. For example, during phase 2 if no choice of placing the cut-off is found, it is possible that no interruption will occur. Two ideas contained in Berg's models seem of interest for our own study: first the possibility of a choice to cut off or not and secondly, the existence of two reformulation stages in his repair model. Therefore it seems useful to incorporate some of Berg's ideas into our own model (see section 3.6.6 for further details).

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<sup>9</sup> See 2.5 for definition.





**Figure 8:** *Berg's repair model (adapted from Berg, 1986a: 211)*

Both Levelt and Berg's studies showed the importance of the place of interruption for repair mechanisms. Following on from the cut-off place, the repair as such is said to be part of a more active reorganization of the utterance. According to Levelt (1983), even if speakers repair their speech, they still want it to be communicative. Therefore, he proposes the existence of a so-called 'Well-Formedness rule'. Having observed speakers' repairs, Levelt suggests that they follow certain rules and principles so that listening problems are minimized. He (1989: 486) gives the following rule:

"An original utterance plus repair <OR> is well formed if and only if there is a string C such that the string <OC or R> is well formed, where C is a completion of the constituent directly dominating the last element of O (*or* is to be deleted if that last element is itself a connective such as *or* or *and*)" (O is the original utterance, R is the

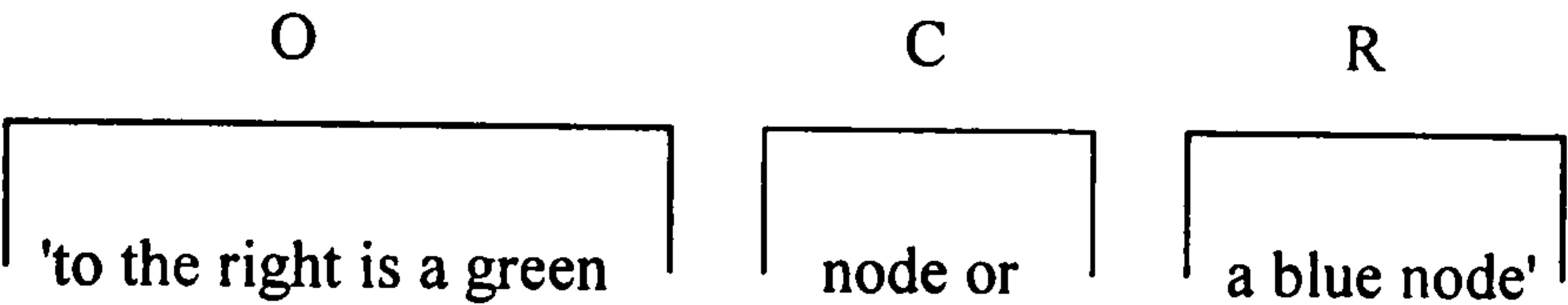
repair proper, C is a string of zero or more words that is to complete the original utterance) The rule ignores the use of editing expressions.

Van Hest, Poullisse and Bongaerts (1997: 95) quote an example to illustrate Levelt's rule (see Figure 9 below).

Repair:



application of the Well - Formedness Rule shows that the repair is well-formed:



**Figure 9:** *Levelt's Well-Formedness Rule (adapted from Levelt, 1983: 78-84, see also Van Hest et al., 1997: 95)*

It is important to note that, for the example in Figure 9 to work, 'or' has to be understood not in its normal sense, in other words 'what follows is an alternative' but rather as 'what follows replaces what precedes'.

Levelt applied the 'Well-Formedness Rule' to his data collection, apart from two categories (i.e. Rest and Syntactic errors) and found that 896 out of 913 repairs were well formed (Van Hest et al., 1997: 96).

Van Wijk and Kempen (1987) tried to verify Levelt's 'Well-Formedness Rule' and applied it to an experiment. They used artificially elicited self-repairs and analysed 2,112 repairs of prepositional phrases, 878 after immediate and 1,234 after delayed cut-offs. On the basis of their experiment, they suggest two different repair strategies. The first one is a reformulation where "all or parts of the structural elements in the original utterance are changed and speakers devise a new syntactic structure". The second one they called a 'lemma



substitution': "one lemma in the original utterance is replaced without changing the original syntactic structure" (Van Hest *et al.*, 1997: 96-97). Van Wijk and Kempen found that the 'Well-Formedness Rule' seemed to apply to reformulations only (see Van Hest *et al.*, 1997).

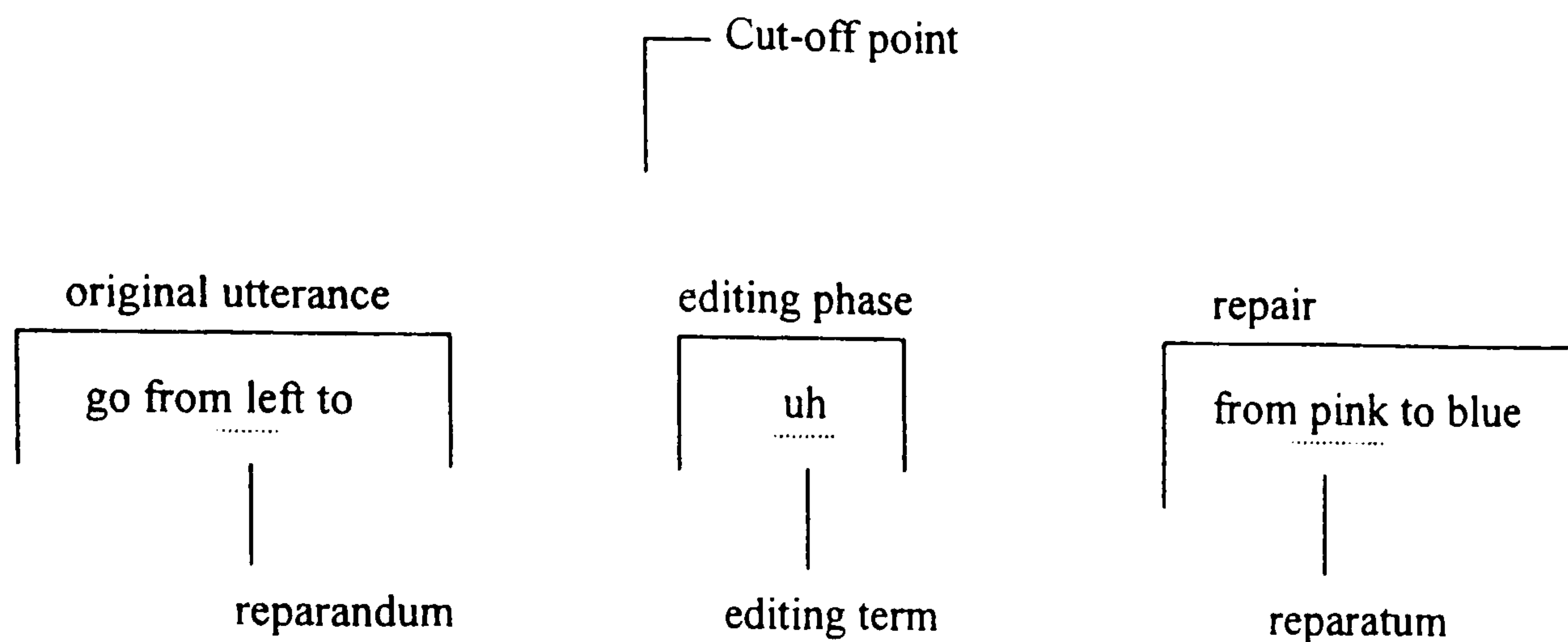
Although our study will neither focus on the Main Interruption Rule nor on the Well Formedness Rule, it seems interesting to wonder whether both rules can be applied to our data of simultaneous interpreting and tell us something about the interpreting process. The latter (WFR) has a direct impact on the communicative act. Therefore we can intuitively hypothesize that a majority of repairs in our corpus should be well-formed as interpreters need to communicate a meaning, even when they repair their output.

## **2.5 Different categories of repairs**

Based on his extensive list of examples, Levelt proposes detailed categories of repairs. His classification is based on the cause of the repairs he observed. He makes the distinction between overt and covert repairs. Hockett (1973: 118-119) was the first to formalize the use of 'overt' and 'covert' editing: "Editing in the internal flow is COVERT EDITING. (...) Much more typically, what is actually said aloud includes various signs of OVERT EDITING (...)".

In the case of overt repairs, the monitoring is post-articulatory, in other words it involves a backtracking. Overt repairs are made out of three different parts: "the original utterance, which contains the item to be corrected (the so-called reparandum), an editing phase immediately following the moment of interruption (cut-off point), and the repair proper, which contains the correct item, the so-called reparatum" (Levelt: 44; see also Van Hest *et al.*, 1997: 88). This is illustrated in Figure 10 below.

In the case of covert repairs, the utterance is corrected pre-articulation, in other words, during the inner loop (Van Hest *et al.*, 1997: 87). Covert repairs (C-repairs) are found when "no morphemes are changed, added or deleted" or when the same word is repeated without



**Figure 10:** Levelt's structure of an overt repair (Levelt, 1983: 45, see also Van Hest et al., 1997: 88)

change as in "go to a red, red node" (Levelt, 1983: 44-45). C-repairs are defined as being "characterized by either just an interruption plus editing term or the repeat of one or more lexical items" (*ibid.*: 55). What is also interesting is the use of editing terms even if there is no overt trouble, for example as in "it's uh the blue node" (Levelt quoted in Garnsey and Dell, 1984: 67). Levelt admits that with covert-repairs, it is very complicated to know what is the purpose of the speaker's monitoring. Nevertheless, many of the covert repairs Levelt found in his study make him believe that "monitoring can take place before the utterance is overtly expressed" (Levelt, 1983: 55).<sup>10</sup> Levelt (1989: 13) gives the following example to exemplify this category: "(...) To the left side of the purple disk is a v-, a horizontal line". In this example, the speaker started to say 'vertical' and did not finish the planned word. Because the word was not uttered completely, the external loop could not recognize it. This shows that self-monitoring does not have to be based on overt speech (*ibid.*: 474).

As already stated, many scholars agree on the possibility of pre-articulatory detection (for more details see Postma and Kolk, 1993: 476). The existence of C-repairs would suggest that the speaker has access to his inner speech and can correct it before articulating it. However, for the purpose of our study, it seems more adequate to replace the notion of

<sup>10</sup> See Postma and Kolk, 1993: 476 quoted in section 2.4.2 above.



'covert repairs' with the idea of 'mid-articulatory repairs'. As the study will show<sup>11</sup> evidence was found that, often, the utterance has already been partly articulated before being repaired as in Levelt's example: "(...) to the left side of the purple disk is a v-, a horizontal line", cited above. Therefore, it seems more appropriate to speak of 'mid-articulatory' than of 'pre-articulatory' repairs. Consequently, pre-articulatory repairs will not be counted in our study except where there is audible evidence (see chapter 4 for a more detailed account).

In his study, Levelt found a majority of overt repairs and further divided them into error repairs (E-repairs), appropriateness repairs (A-repairs) and different repairs (D-repairs). Both the error repairs and the appropriateness repairs are classified in terms of their cause. Levelt wishes to find out why someone repairs an utterance. Therefore, he asks the following questions: what do speakers monitor for?

- 1) Is this the message or concept I want to express now?
  - 2) Is this the way I want to say it?
  - 3) Is what I am saying up to social standards?
  - 4) Am I making a lexical error?
  - 5) Are my syntax and my morphology all right?
  - 6) Am I making a sound-form error?
  - 7) Has my articulation the right speed, loudness, precision, fluency?
- (Levelt, 1989: 460-463).

In the case of the A-repairs, the speaker "becomes aware that the way he expresses the intended information (idea, concept, proposition) needs qualification in view of the context of expression" (Levelt, 1983: 52). There are different subcategories of A-repairs, i.e. AA-repairs (where the speaker repairs an ambiguous term; there are 46 in Levelt's corpus), AL-repairs (where the speaker moves from a less to a more precise term or makes a level adaptation; there are 129 in Levelt's corpus), AC-repairs (where the speaker monitors for coherence with previous text or terminology; 47 cases in Levelt's study). This last category might tell us more about simultaneous interpreting. Finally, Levelt adds another A-category

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<sup>11</sup> For a more detailed account, see chapter 4.



for the repairs where it was not possible to determine whether the speaker is making a level adaptation (in other words changes the terminology) or establishing coherence. This subcategory is called ALC repairs (68 instances in his corpus). Monitoring for the different elements mentioned above (i.e. ambiguity, coherence and appropriate level of terminology) does not mean monitoring for errors (*ibid.*: 53). One example of AA repair is as follows: "with a blue spot, a blue disc at the upper hand" (Levelt, 1983: 52). In this case, the second term ('disc') is more appropriate than the first one ('spot').

In the case of D-repairs, speakers prefer a different order of words, in other words, they operate a change of direction and give an alternative syntax. Levelt explains that the speaker may start an utterance and realize that he would rather say something else. He (1983: 51) proposes the following example: 'We go straight on or ... We come in via red, go then straight on to green'<sup>12</sup>. In this example, the speaker decides to change his utterance. According to Blackmer and Mitton (1981: 180): "In different repairs, the message is interrupted and replaced with a different message, rather than a corrected message". Levelt found only 10 such instances in his corpus or the equivalent of one per cent.

As far as E-repairs are concerned, the speaker detects a mistake or an error. Levelt (1983: 53) gives the following example: "Straight on red, or sorry, straight on black". Mistakes can happen at different levels: lexical (EL-repairs; a very frequent category with 369 instances), syntactic (ES-repairs; only 22 examples) or even phonetic (EF-repairs; far less frequent than expected with only eight in the corpus). In total, the number of Error repairs account for 42 per cent of Levelt's whole corpus.

Finally, Levelt also added a residual category of different repairs or 'rest-category' where he includes repairs, which cannot fit into any of the categories mentioned above. According to him (1983: 55), this category contains repairs "which are so completely confused that they defy any systematic categorization". Unfortunately, Levelt does not present any example of

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<sup>12</sup> All the examples taken from Levelt's corpus were originally in Dutch; only the English gloss is used here for the purpose of illustration.



Rest repairs but explains that they account for 24 examples (i.e. 2.5 %) of his data. The following table is a summary of Levelt's different repair categories:

Overt repairs (post-articulatory)	Covert repairs (pre-articulatory)	Rest repairs
<div> <div>E: Error</div> <div> <div>→ EL</div> <div>→ ES</div> <div>→ EF</div> </div> </div>		
<div> <div>A: Appropriateness</div> <div> <div>→ AA</div> <div>→ AL</div> <div>→ AC</div> <div>→ ALC</div> </div> </div>		
D: Different		

**Table 11:** *Taxonomy of repairs (Levelt, 1983)*

In contrast to Levelt, Van Wijk and Kempen (1987: 405) are not so much interested in the "motives behind a self-repair" but would rather like to investigate the "formal relationship of the repair text to the original utterance". In their study of a picture description task, Van Wijk and Kempen presented pictorial aspects to subjects and changed the picture in order to artificially elicit 2,112 repairs. The pictures were arranged in such a way that the subjects' descriptions would contain noun phrases including a prepositional phrase. The study allowed them to introduce the notions of 'retracing and nonretracing repairs' (for more details see Van Hest *et al.*, 1997: 96). The former is the type of repair found in the majority of literature on the subject. It is an "interruption of speech and a backtracking to an earlier point of the utterance. Usually, the speaker repeats it either fully or in a partly modified form"(Van Wijk and Kempen, 1987: 406). The latter, i.e. the 'nonretracing repair' does not include any backtracking. In other words, the utterance is replaced by the repair text but the speaker does not go back (for example: "How did things go after the accident? ... I MEAN between you and John", *ibid.*: 431). This distinction could be useful for the purpose of our study. Van Wijk and Kempen also make a distinction between on the one hand ADD-repairs when an attribute is added – this would correspond to our category of 'disguised repairs' (for a more

detailed account see chapter 4) – and on the other hand, SU-repairs (substituting an attribute) and DEL-repairs (deleting an attribute). Following the two different repair strategies, i.e. 'the reformulation' and the 'lemma substitution', they show how the ADD-repairs come from the former (i.e. 'reformulation') and the SUB- and DEL-repairs from the latter (i.e. 'lemma substitution'). Van Wijk and Kempen's categories can be summarized as follows:

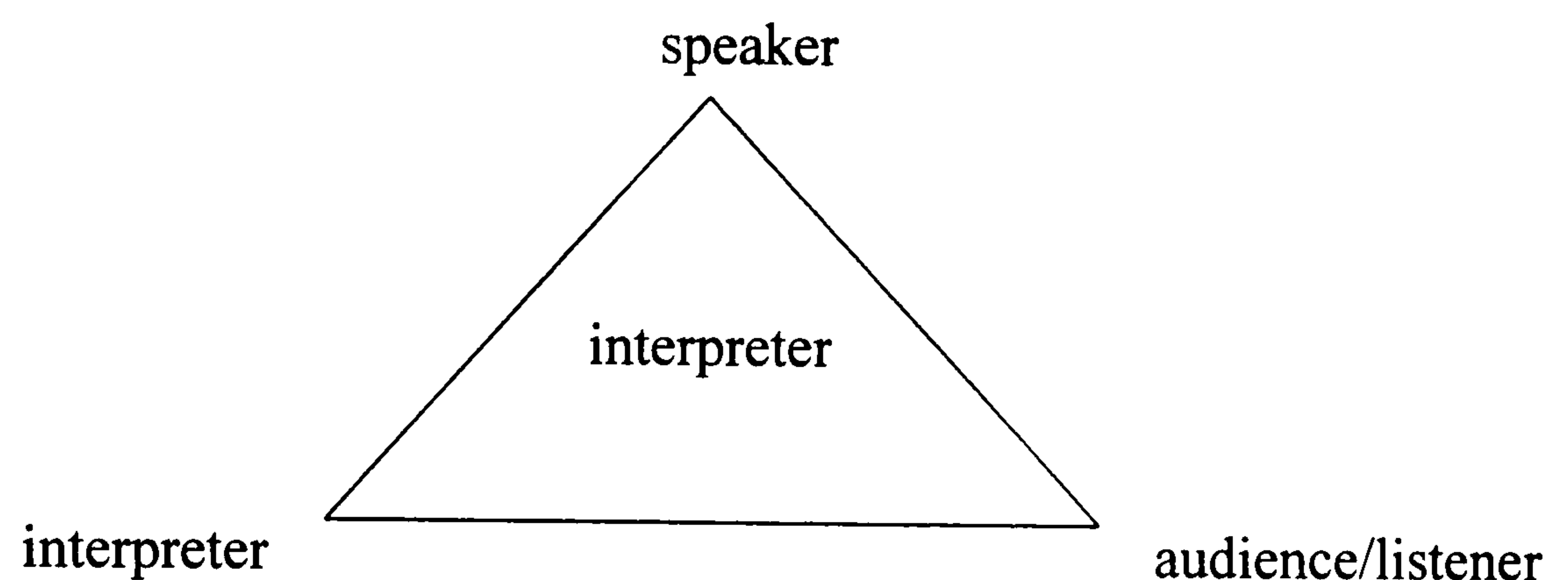
Reformulation	Lemma substitution
ADD-repairs	SUB-repairs
	DEL-repairs

**Table 12:** *Taxonomy of Van Wijk and Kempen's repairs (Van Wijk and Kempen, 1987)*

Both accounts seem interesting but Levelt focuses on the reason why a speaker repairs his/her utterance. Therefore, it is more appropriate to use his categories for the purpose of our study. Having said that, we will need to adapt them as Levelt 's research is not about translation but rather about spontaneous speech and based on phonetics. Moreover, Levelt's categories do not bring the discourse aspect, in other words the whole text, into the different divisions.

During simultaneous interpreting, the interpreter's role is to relay a version of what the speaker has said in one language to the audience in another language. The channel of communication does not only go from the speaker to the audience via the interpreter but the interpreter him/herself has a role to play in the act of communication. For example the interpreter might decide to repair an utterance for different reasons, not to repair it or even to repair it for oneself (for a more detailed account, see chapter 4). This could be represented through a triangle where the three ends are as follows: the speaker, the interpreter and the listener but where the interpreter is also present in the middle of the triangle in other words, relaying the message to all three and participating actively in the process.





**Figure 13:** *Triangular representation of interpreter-mediated communication*

This hypothesis adds another dimension to the study of repairs in simultaneous interpreting. We are not only taking into account one person who is producing, monitoring speech and making repairs but we are looking at a different and more complex process in which the interpreter is in between a speaker and a receiver and is him/herself both a receiver and a speaker.

If the interpreter decides to repair an utterance, it might be for different reasons. On the one hand, s/he might realize that s/he departed from the source text and wishes to repair his/her output because of the input. This category will be called 'input-generated repairs' and is based on what the speaker said. On the other hand, the interpreter might want to clarify his/her utterance for the audience. In this instance, the interpreter repairs the trouble so that the audience can understand his/her output. This category of repairs will be called 'output-generated' and is based on what the interpreter said. In summary, a main distinction will be made between repairs triggered either by the original input or by the interpreter's output. Like other scholars, we will see that categories are not always clear cut and prove to be fuzzy<sup>13</sup>. Consequently, a slightly different subdivision will be adopted for the purpose of our study.

In Table 14, we have retained some of Levelt's ideas and introduced a division between input and output-generated repairs in order to take the simultaneous interpreting process into

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<sup>13</sup> However, no 'Rest' category was introduced in the new nomenclature.

account (as explained above). We also sub-divided the A repairs into AL (lexical), AC (coherence) and AA (ambiguity) while the E category is also subdivided into EL (lexical),

	Input-generated	Output-generated
Overt	<div> <pre> graph LR     A --&gt; AL     A --&gt; AC     E --&gt; EL     E --&gt; ES     E --&gt; EG     D </pre> </div>	<div> <pre> graph LR     A --&gt; AL     A --&gt; AC     A --&gt; AA     E --&gt; EL     E --&gt; ES     E --&gt; EG     E --&gt; EF     D </pre> </div>
Mid-Articulatory		

**Table 14:** *A nomenclature of repairs*

ES (syntactic), EG (grammar) and EF (phonetic). The D repair category is not changed but we also introduced another idea of 'Mid-Articulatory' repairs which differs from the covert category put forward by Levelt in his study (for more details, see above, this section).

### 2.6 Speech reception in communication

Speech production is intrinsically linked with speech reception. Although we hear and understand speech on a daily basis, speech comprehension is not an easy area to research<sup>14</sup>. Indeed, speech comprehension studies are often linked with speech production research (see Levelt, 1983, 1989) although, as De Bot (1992: 3) underlines: "Levelt's speech production model hardly says anything about language perception". The simultaneous interpreter is by nature not only a speech producer but also a speech receiver. Therefore, we shall concentrate in this section on the reception of speech looking at what psychologists and linguists say about speech comprehension. We will focus on a pragmatics-based approach and will be

<sup>14</sup> See LaBerge and Samuels (1974: 320) quoted in Kintsch and Van Dijk (1978): "(...) the complexity of the comprehension operation appears to be as enormous as that of thinking in general (...)"



introducing notions of Relevance Theory and its application to the study of simultaneous interpreting data. But first, we shall look at general notions of speech comprehension.

Speech perception, as speech production, can be divided into different stages. As an introductory comment we can say that first, at the level of the auditory perception, the receiver identifies acoustic signals, then these decoded speech sounds are used as input to the word-level processes where lexical entries are selected in the mental lexicon. At this level, information is provided on the pronunciation of the word, grammatical components related to it and its meaning. Finally the syntactic process, by adding contexts, situations and the receiver's world knowledge, will give its meaning to the word (adapted from Peier, 1988: 23).

A more detailed psychological account is given by Clark and Clark (1977: 45), who see speech perception as a set of decisions made by the listener. Having carried out some work on the psychology of language, they believe that speech comprehension can be divided into the two following processes:

- a) A narrow definition of the process is called the 'construction process', i.e. "the way listeners construct an interpretation of a sentence from the speakers' words";
- b) A broader definition called the 'utilization process', i.e. "how listeners utilize this interpretation for further purposes".

Within the construction process, listeners build an underlying representation of the sentence<sup>15</sup> they hear. Based on the work they carried out on the construction of the underlying representation for a sentence, Clark and Clark summarize the process in the following four steps:

- a) listeners take in raw speech and retain a phonological representation of it in 'working memory';

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<sup>15</sup> It is important to note here that 'sentence' is inappropriate as a unit of analysis of speech.

- b) listeners immediately try to organize the phonological representation into constituents, identifying their content and function (Clark and Clark, 1977: 47-48: "a constituent is a group of words that can be replaced by a single word without a change in function and without doing violence to the rest of the sentence");
- c) as listeners identify each constituent, they use it to construct underlying propositions, building continually onto a hierarchical representation of propositions;
- d) once the propositions are identified for a constituent, listeners keep them in working memory and at some point purge memory of the phonological representation. In doing this, they forget the exact wording and retain the meaning (adapted from Clark and Clark, 1977: 49; for a more detailed account on memory, see Baddeley, 1990).

It is important to note that the four steps do not occur one after the other but are rather happening at the same time (*ibid.*: 49). Within the utilization process, listeners use their interpretation of the message for further purposes, i.e. "registering new information, answering questions, following orders, etc..." (*ibid.*: 45). According to Clark and Clark listeners 'utilize sentences' in the following way:

- 'a) they hear a sentence and identify the speech act, propositional content and thematic content;
  - b) they search memory for information that matches the given information;
  - c) they deal with the new information depending on the speech act (eg.: if the utterance is an assertion, they add the new information to memory)'
- (adapted from Clark and Clark, 1977: 90).

It seems important to note that the line between the 'construction process', when the listener is building a representation, and the 'utilization process', when the listener is using it, is a very fine one. The idea of matching what we hear with what we already know, or what is also called 'world knowledge', is not new. What is interesting in this theory is the link between the reception of some input and the way in which the receiver uses it.



Based on their psychological approach, Clark and Clark (1977) explain that receivers are able to identify the different constituents of an utterance by inferring. According to them, there are two major approaches a listener can take while making inferences about speech:

- a) a syntactic approach, i.e. when listeners are using the surface features of a sentence, for example the use of sounds and words, and then building and connecting propositions for the whole sentence;
- b) a semantic approach: this occurs when listeners work from the interpretation that a sentence must be conveying, in other words the fact that the sentence refers to entities, events, facts and that the new information is appropriate to the context.

It is important to note that both approaches are used to different degrees (*ibid.*: 57) but the 'semantic approach' seems rather vague and ambiguous.

Another approach taken by linguists and psycholinguists is to suggest the existence of mental models (see for example Johnson-Laird, 1983; Garnham, 1987). This is a cognitive approach rather than a communicative one. We do not wish to elaborate too much on these models but it seems interesting to take note of them as they are rather different from the theory mentioned above and can also explain how speech reception occurs. According to Johnson-Laird (1983: 407):

"the comprehension of discourse depends on three principal levels of representation: first, there is a phonemic (or graphemic) representation that encodes the sounds (or letters) of an utterance; second there is a propositional representation, which is close to the surface form of the utterance; third there is a mental model".

According to Johnson-Laird (1981 quoted in Brown and Yule, 1983: 251), we take the words in a sentence as "cues to build a familiar mental model"; in other words, we do not need to decompose each word but we have an internal model, which is a representation of the state of affairs characterized by the sentence. Psycholinguists like Garnham (1985: 4) suggest that "the language understanding system extracts the content of incoming sentences, and constructs a representation of the situation to which they refer". The content taken from a



sentence is called a 'mental model'. In order to be able to understand, the listener formulates a "structure building framework" (Gernsbacher, 1990: viii in preface).

Kintsch's (1994)<sup>16</sup> model of speech comprehension is called "the construction-integration model" in which the listener constructs a model of the situation described by the text. The type of text is important as it may require additional levels of analysis (see example of poetry and word algebra problems quoted in Kintsch, 1994: 730). First, the listener constructs "a network of the representational units and their interrelations as specified by the text (*ibid.*: 731) then any irrelevant elements are eliminated by a 'contextual integration process' which is a spreading activation process during which elements which belong together contextually will become stronger while elements which do not, die off. According to Kintsch, "understanding always occurs in the context of the previous text" (*ibid.*: 732), in other words, the strongest elements of the previous text are maintained while understanding incoming text, i.e. the coherence of the network is maintained. Irrelevant elements are quickly "deactivated in the integration process before we can become conscious of them" (*ibid.*: 733). Another interesting aspect of Kintsch's theory is his account of macroprocesses. According to him, the mental model of the text to be understood has, itself, a global structure: the so-called 'macrostructure', which is constructed strategically. Indeed, Kintsch gives the example of the reader of a text who, on the basis of certain cues, knows which parts are more important than others. For example, the first sentence of a paragraph tends to be 'macrorelevant' (see Kintsch, 1994: 733-734). This idea seems interesting for our study of simultaneous interpreting data.

Speech processing or real-time processing is also recognized as an arduous task depending on the speed at which speech is uttered. As Clark and Clark (1977: 55-56) put it: "listeners have a limited capacity for processing what they hear in the time available. Their ability to deal with speech breaks down if it is too fast, in a language they know imperfectly, or in competition with another conversation" and further: "there is ample evidence that a difficulty in processing at one point in a sentence slows down processing immediately after that point". This point is of particular significance for our own study. As Fromkin and Rodman (1998:

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<sup>16</sup> See also Kintsch, 1998.



389) note: "humans appear to do speech recognition, parsing, semantic interpretation, and contextual disambiguation more or less simultaneously and smoothly while comprehending speech".

According to Beaugrande and Dressler (1981: 42-43) speech reception goes from a "surface text parsed into grammatical dependencies" which then moves on to the "activation of concepts and relations in mental storage, i.e. a so-called concept recovery", then the ideas are "extracted in a phase of idea recovery". Each phase can be more or less intense and long depending on different factors. Beaugrande and Dressler (1981: 43) cite: "the receiver's judgement of the text's quality", "the degree to which the text's content should be integrated into the receiver's store of prior knowledge" and finally "the receiver's cognitive and emotional involvement in the communicative situation". Another interesting and important notion mentioned by Beaugrande and Dressler (*ibid.*: 43) is the idea of "threshold of termination", in other words a point at which "comprehension and integration of the text is deemed satisfactory". As they observe, if "the text is important for the receiver, the threshold will be high". We can hypothesize that in simultaneous interpreting the threshold of the original speaker's input will be very high for the interpreter. Finally, Beaugrande and Dressler (*ibid.*: 44) also admit that the reception of a text is not necessarily the reversal of the production process. Indeed, the receiver needs to anticipate what the producer said in order to be able to react rapidly or in order to 'recover the plans and ideas more quickly'. The receiver needs to "create and test hypotheses" in relation with the producer's utterances.

As we have seen, the stages involved in the perception of speech are rather complex. Other accounts suggest the existence of top-down and bottom-up processing. Top-down processing is said to be "knowledge-driven", while bottom-up processing is "data-driven" (see Marslen-Wilson and Welsh, 1978). Top-down processing means that we use semantic and syntactic information and move to the sensory input. In other words, this enables us to predict what is to follow while bottom-up processing goes from the acoustic signal to the semantic interpretation (Fromkin and Rodman, 1998: 367). Research has given some evidence for the existence of top-down processing. Warren (1970) shows that listeners can restore phonemes in words where they have been replaced either by a cough or a buzz and in another study,



Cole (1973) suggests that listeners rarely detect the mispronunciation of a word where a phoneme has been changed (both studies are quoted in Marslen-Wilson and Welsh, 1978: 31). However, scholars agree that speech recognition includes both top-down and bottom-up processing.

The recognition of words in sentences is easier than words taken in isolation (see Fromkin and Rodman, 1998: 367). This shows that the context in which the words and sentences are uttered is of high significance. For example, if the receiver hears '[najtret]' while looking for a room in a motel, it is more than likely that it will be interpreted as 'night rate' while the same utterance in a chemistry laboratory would be understood as 'nitrate' (examples quoted in Fromkin and Rodman, 1998: 367). This brings us to the subject of context and a pragmatics-based approach to the way we comprehend utterances.

### *2.6.1 Pragmatics*

Pragmatics focuses on the study of language in communication or as Levinson (1983: 5) puts it "the study of language usage". For a long time, it has been used as a 'waste basket' of other disciplines, such as linguistics. The work carried out by philosophers such as Austin (1962), Searle (1969) and later, Grice (1975) had a major influence on pragmatics, which then became a discipline in its own right (for more details, see Leech, 1983; Levinson, 1983; Mey, 2001).

Pragmatics is defined as "the study of the relationships between linguistic forms and the users of those forms" (Yule, 1996: 4) or "the study of meaning in relation to speech situations" (Leech, 1983: 6). Mey (2001: 6) goes further by adding a social dimension when he states that: "pragmatics studies the use of language in human communication as determined by the conditions of society". By its very nature, simultaneous interpreting is an act of communication in a social context. Therefore, it seems appropriate to use pragmatics as a tool for our study in order to gain insights into the 'speakers' intentions, purposes and goals'. However, it is also important to note that a speaker's intended meaning can also prove to be a difficult area of research in terms of objectivity (see Yule, 1996). The usefulness of



this discipline for our purposes lies in the communicative aspects of language pragmatics wishes to concentrate on, in other words, "how language is used in communication" (Leech, 1983: 1).

The procedural approach taken by Beaugrande and Dressler (1981: 31) proposes that "pragmatics is the domain of PLANS and GOALS" (...) and further that "the concerns of pragmatics are dealt with by exploring the attitudes of producers ('intentionality') and receivers ('acceptability'), and the communicative settings ('situationality')". For Mey (2001) similarly, the social or communicative setting is of significant importance. As stated earlier, this notion of social/communicative setting is essential to the study of simultaneous interpreting data.

### *2.6.2 Inferring information*

One way of recognizing the different elements of an utterance is by using a decoding process; another is by a so-called inferential process. A layman's assumption would be to say that inferences are simply deductions. Several scholars in psycholinguistics and psychology propose various definitions of inferences. According to Yule (1996: 131) an "inference is the listener's use of additional knowledge to make sense of what is not explicit in an utterance" or "the adding of one's knowledge to bring a textual world together is called INFERENCING" (Beaugrande and Dressler, 1981: 6).

In their definition, Kintsch and Van Dijk (1978: 365) go further and seem more precise:

"Language users are able to provide, during comprehension, the missing links of a sequence on the basis of their general or contextual knowledge of the facts. In other words, the facts, as known, allow them to make inferences about possible, likely, or necessary other facts and to interpolate missing propositions that may make the sequence coherent".

The receiver of speech needs access to extra contextual or world knowledge in order to be able to understand an utterance or even make up for missing information. This is the point where speech production and speech reception meet again. As Yule (1996: 40) puts it:

"it is important to note that it is speakers who communicate meaning via implicatures and it is listeners who recognize those communicated meanings via inference. The inferences selected are those which will preserve the assumption of cooperation".

This means that both speakers and receivers need to cooperate for communication to happen. Grice (1975: 45) developed a Cooperative principle based on the idea that people, when they communicate, have something to tell each other and need to cooperate in order to do so. The Cooperative principle is divided into four sub-categories or nine maxims as follows:

a) The maxim of quantity:

1. Make your contribution as informative as required;
2. Do not make your contribution more informative than required.

b) The maxim of quality:

1. Do not say what you believe to be false;
2. Do not say that for which you lack adequate evidence.

c) The maxim of relation:

Make your contribution relevant.

d) The maxim of manner:

Be perspicuous, and specifically:

1. Avoid obscurity
2. Avoid ambiguity
3. Be brief
4. Be orderly.



The maxims are intended to explain the way speakers communicate, in other words it is a theory, which is to be applied to the study of conversations.

Scholars also propose different approaches to communication. Some suggest the existence of a 'code model', in other words a model in which speakers and receivers encode and decode messages while others propose the possibility of an 'inferential model'. "According to the inferential model, communication is achieved by producing and interpreting evidence" (Sperber and Wilson, 1986: 2). According to Sperber and Wilson (*ibid.* 23), it is "inferential in that the audience infers the communicator's intention from evidence provided for this precise purpose". Sperber and Wilson (*ibid.*: 12-13) add that a combination of both, i.e. code and inferential models could account for communication in general:

"An *inferential process* starts from a set of premises and results in a set of conclusions which follow logically from, or are at least warranted by, the premises. A *decoding process* starts from a signal and results in the recovery of a message which is associated to the signal by an underlying code".

In their definition of an inference, Sperber and Wilson (*ibid.*: 68) underline the importance of comparison when they say: "inference is the process by which an assumption is accepted as true or probably true on the strength of the truth or probable truth of other assumptions".

Scholars also make distinctions between different types of inferences. Johnson-Laird (1983: 127) talks of "explicit inferences", which require a voluntary decision, in other words the receiver has to make an effort, or "implicit inferences" which are more intuitive and hence faster and do not require much effort. This distinction could be interesting for our study of simultaneous interpreting. The interpreter who is processing input and producing output is under extreme time pressure to infer information. Therefore, we could hypothesize that the interpreter would make more implicit inferences. Sperber and Wilson (1986: 68) make a distinction between "demonstrative inference", where deductive rules are applied to an initial set of premises (also called "deductive inference" by Brown and Yule, 1983: 33) and "non-demonstrative inference", where a hypothesis needs to be "formed" and "confirmed". While



both types of inferences will be going on all the time, we could hypothesize that "non-demonstrative inferences" use up greater effort and are therefore less easily available during simultaneous interpreting. Another interesting point needs to be underlined. Although Brown and Yule (1983: 34) accept the existence of inferences, they claim that speech receivers are hardly asked to perform inferences on a daily basis. According to them, receivers "operate with a rather loose form of inferencing".

Whether we see inferences as a simple deduction or a more sophisticated process, which enables speech receivers to draw on previous knowledge in order to comprehend an utterance, one thing is sure: we all infer information constantly without even being aware of it. Inferring information enables speech receivers to add necessary elements to the comprehension of speech and, in some circumstances, to remove ambiguities in utterances.

### *2.6.3 A relevance theory approach to communication*

Relevance theory as developed by Sperber and Wilson (1986, 1995)<sup>17</sup> is based on Grice's research (1975). Sperber and Wilson (1986, 1995) depart from Grice's Cooperative Principle and maxims and specify the cooperation principle by proposing a so-called relevance theory.

Relevance theory postulates that communication between human beings is based on the capacity a person has to infer the "communicator's intention from evidence provided for a precise purpose" (adapted from Sperber and Wilson, 1987: 699). This is what Sperber and Wilson call "inferential communication". This type of verbal communication departs from the traditional 'coding vs. decoding' process. Pragmatists claim the existence of an 'inferential' process (for more details, see section 2.6.2) and Sperber and Wilson (1987: 698) suggest that the "decoding process could contain an inferential process as a subpart". In Sperber and Wilson's theory, communication is called 'ostensive-inferential' because the speaker makes his intention manifest through ostension<sup>18</sup> and the audience infers the information. It is also important to underline that an ostensive behaviour is not necessarily

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<sup>17</sup> See Jucker (1997) for a review of Sperber and Wilson's second edition of 'Relevance' (1995).

<sup>18</sup> Ostensive communication or 'ostension' is "a behaviour which makes manifest an intention to make something manifest" (Sperber and Wilson, 1986: 49).



only verbal. As Sperber and Wilson note, it can also be a gesture (for more details, see Sperber and Wilson, 1998).

In order to understand an utterance, the context, also defined as "the set of premises used in interpreting an utterance" (Sperber and Wilson 1986: 15) is crucial. In relevance theory, the context is a broad term, which refers to the so-called "cognitive environment". It is defined as follows:

"A *cognitive environment* of an individual is a set of facts that are manifest to him. A fact is *manifest* to an individual at a given time if, and only if, the individual is capable at that time of representing it mentally and accepting its representation as true or probably true" (Sperber and Wilson, 1987: 699).

The cognitive environment comprises information in the physical environment as well as memory and information, which can be inferred from various sources, eg. cultural knowledge. In other words, the total cognitive environment is not only what the individual is aware of, but "all the facts that he is capable of becoming aware of at that time and place" (*ibid.*: 699). According to relevance theory, the purpose of communication is to "enlarge mutual cognitive environments" (Sperber and Wilson, 1986: 193). This notion of cognitive environment seems useful in the simultaneous interpreting situation (see chapter 4).

Sperber and Wilson (1986: 16) also cast doubt on the notion of 'world knowledge' when they claim that on the basis of their experience, 'people's assumptions about the world can be quite different'. To illustrate this, they quote the example of witnesses of the same car accident who relate the event in a totally different manner. In other words, people have different 'assumptions' about the world. Differences in their lives mean that people's 'memorised information' will be different.

In order for communication to be successful, there needs to be some modification to the contextual assumptions of the hearer. This is what is called 'contextual effects' in relevance theory. Contextual effects can derive from contextual implications, they can strengthen,



confirm or even eliminate previously-held assumptions. These three notions are of significant importance for our study of repairs in simultaneous interpreting and will be applied to our data, as we will see later on in the analysis (see chapter 4).

In relevance theory communication is governed by a principle of relevance. The term 'relevance' is not to be understood here in its ordinary English use, instead it refers to a technical notion of cognition. Sperber and Wilson (1986: 158) give the following definition of their theory: "every act of ostensive communication communicates the presumption of its own optimal relevance". It is important to note that this theory only applies to 'ostensive communication'. By suggesting the existence of this theory, Sperber and Wilson propose that communicators intend addressees to believe that they produce optimally relevant stimuli. In other words, the attention of the audience only goes to what is presumed relevant (also see Wilson and Sperber, 1993).

It seems important to note furthermore that there are different degrees of relevance. Sperber and Wilson introduce the idea of a 'cost/benefit analysis' or 'cost-effectiveness'. The main idea of relevance theory is based on the optimization of resources, in other words, achieving maximum effect while using minimum processing effort. This means that 'an assumption with greater contextual effects and requiring a smaller processing effort is more relevant' (adapted from Sperber and Wilson, 1987: 703). This implies that hearers and listeners will start with the context, which is more easily accessible to them. Here again, the notion of minimum effort for maximum effect can be applied to our study of simultaneous interpreting data, especially because for interpreters processing time and effort are at a premium.

In order for the hearer and listener to understand the speaker, both hearer and speaker need to share some assumptions, in other words, the utterance must be "mutually known" (Sperber and Wilson, 1996: 18). Sperber and Wilson (1986: 19-20) however dislike the idea of a 'mutual knowledge' because as they put it:

"If you do not know that you have mutual knowledge (of some fact, with someone),



then you do not have it. Mutual knowledge must be certain, or else it does not exist; and since it can never be certain it can never exist".

Therefore, in order to find a more viable assumption, Sperber and Wilson propose the notion of a 'mutual manifestness'<sup>19</sup> of knowledge. According to them (1986: 39): "to be manifest, then, is to be perceptible or inferable". The fact that individuals have access to similar cognitive environments<sup>20</sup> makes mutual manifest knowledge possible (see Talbot, 1994 for criticisms of the notion of 'mutual manifestness', for example the absence of a social element in this theory). If we wish to extend this theory to the simultaneous interpreting process, we can say that the assumptions on which utterances are produced by speakers are more mutually manifest to the audience at an international conference, than to the interpreter. Generally, participants at a conference are experts in the field, therefore speakers share their cognitive environments with the audience, while the interpreter does not, at least to the same extent. The result of successful communication is an enlarged mutual cognitive environment.

Relevance theory has had a significant influence on research carried out in the field of pragmatics and can be said to have furthered Grice's cooperative principle by explaining the explicit as well as the implicit. A major difference between Grice and Sperber and Wilson is that the former believes communication to be an act of cooperation while the latter think that the main element which speakers and receivers need to have in common is the desire to achieve successful communication.

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<sup>19</sup> "A fact is *manifest* to an individual at a given time if and only if he is capable at that time of representing it mentally and accepting its representation as true or probably true" (Sperber and Wilson, 1986: 39).

<sup>20</sup> "A *cognitive environment* of an individual is a set of facts that are manifest to him" (Sperber and Wilson, 1986: 39).



It is important to note that relevance theory has also encountered a lot of criticisms. Either scholars have accepted the new paradigm or they claim that it is "asocial" (Talbot, 1994: 3525; also see Mey and Talbot, 1988) and/or "reductionist" (Levinson, 1989: 456). According to Talbot (1994: 3526), the idea of a "cognitive environment" in relevance theory does not account for any "divergence of assumptions according to class, gender, or ethnicity". She thinks that Sperber and Wilson's account is too "ethnocentric". Although this point is valid, the criticism hardly applies to our simultaneous interpreting data. However, it can be understood by looking at the conference situation in which the interpreting takes place. Indeed, just like the linguists and cognitive scientists Talbot uses as examples, both the listeners at a conference and the interpreters themselves are more than likely to be 'white, middle-class, educated' (at least at the conferences, which were selected for the corpus analysed herein). Levinson (1989: 456, 469), in his vehemently critical account of Sperber and Wilson's theory, claims that they "ignore many developments in semantics, pragmatics, the study of inference", that "the theory is globally reductive and obscure, does not have any empirical application and is not data-driven". However, scholars who criticize Sperber and Wilson's theory also recognize that relevance theory replaced Grice's cooperative principle because it can explain not only implicatures but also explicatures and it gives a better account of irony (see Jucker, 1997).

As we have seen, this succinct introduction to relevance theory shows great potential for the study of our simultaneous interpreting corpus. Without necessarily accepting relevance theory as a comprehensive account of communication, we shall use some of its tenets and numerous ideas from relevance theory will be used and applied to the analysis of the data. However, as we pointed out earlier, neither Grice's cooperative principle nor Sperber and Wilson's relevance theory take into account the translation/interpreting process as such. The type of communication involved in simultaneous interpreting is rather different from the object of research carried out by pragmatists. Indeed, the simultaneous interpreting process involves a third actor who is neither the speaker nor the listener but regroups both: the interpreter. Therefore, it seems adequate to look at the application of relevance theory to the translation process.



#### 2.6.4 Relevance theory and translation: the notion of resemblance

Gutt (1991, 2000)<sup>21</sup> uses relevance theory as a framework and applies it to various aspects of translation. Following his research, Gutt claimed that relevance theory alone was enough to account for translation and that there was no need to formulate a separate general theory of translation. According to Gutt, relevance theory, which tries to explain how people use different information processing capacities to communicate, constitutes an appropriate starting point to look at various aspects of translation. The "psychological optimization principle" further constitutes a good basis for an "empirical account of evaluation and decision-making" (Gutt, 1991: 21). Gutt uses relevance theory as a basis for his study because he sees translation as part of communication. This aspect seems more than adequate for our own purposes as interpreting is *per se* an act of communication.

According to the principle of relevance, "an utterance must achieve adequate contextual effects and *put the hearer to no unjustifiable effort in achieving them*" (Gutt, 1991: 33, italics in original). This means that a communicator will try to give the addressee as much contextual information as possible in order to prevent ambiguities. This, in turn, will ease the addressee's processing load. This notion is of significance for our study of repairs in simultaneous interpreting. Indeed, we need to ask ourselves whether the repair of an utterance will ease or, on the contrary, increase the receiver's processing load (for more details, see chapter 4).

In relevance theory, a distinction is made between a "descriptive use" and an "interpretive use" of language (for more details, see Sperber and Wilson, 1986: 224). While the former applies to translations where "the relationship to the original is incidental rather than crucial", the latter is used where the resemblance with the source text is important (see Gutt, 1991:188). For Gutt, translation is an 'interpretive use of language', which attempts to achieve 'interpretive resemblance' with the source text. This notion moves away from the idea of 'equivalence' in translation. Gutt (1991: 34) gives the following definition of "interpretive resemblance":

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<sup>21</sup> For a review of Gutt's second edition (2000), see Tirkkonen-Condit, 2002.



"(...) we can say that mental representations whose propositional forms share logical properties *resemble* each other in virtue of these shared logical properties. Such resemblance between propositional forms is called *interpretive resemblance*" (italics in original).

Gutt (*ibid.*: 33) explains that we do not always say what we think. He quotes the example "I have a thousand things to do" when in fact, one can only list twenty or thirty jobs. This shows that the relationship between "what we say and what we intend to communicate is one of interpretive resemblance". This concept is then applied to translation and Gutt suggests that trying to achieve 'interpretive resemblance' to the source language means reproducing all its communicative clues. If two utterances in two different languages are interpreted in the same way when they are processed in the same context, then Gutt claims that they share all their communicative clues (*ibid.*: 162). The aim of the translation is to maintain all the communicative clues in the source text. Gutt further claims that the interpretation of utterances depends on the context and this also implies that "the resemblance between utterances is context-dependent" (*ibid.*: 42).

According to relevance theory, the speaker is an ostensive communicator; this is now applied to the translator who, then, becomes an ostensive communicator. Depending on the cognitive environment of his audience, the translator will know what he can expect to convey to his audience. Nevertheless, Gutt (*ibid.*: 96) suggests: "(...) it should be possible, at least in principle, to communicate a particular 'message' or interpretation to any audience, no matter what their cognitive environment is like".

However, Gutt's account has encountered criticisms. Tirkonnen-Condit (2002: 194) in her review claims that relevance theory "does not go all the way in explaining translation". She suggests that Gutt takes the interlinguality of translation for granted and hence does not focus on the "unique cognitive elements" brought by translation and secondly that he overlooks the translator as a "decision-making agent". Setton (1999) adds two critical comments to Gutt's theory. According to him, Gutt's account is based on the idea that what is implicit or explicit



in the source text will be implicit and explicit respectively in the target text with the "same strength of implication". Setton (*ibid.*: 10) notes the following: "different languages and Speakers encode different aspects of the implicit and the explicit; and different Addressees have different background contexts". While Setton is critical of Gutt's account, it is important to note that he too (see Setton, 1999: 7-12) adopts a relevance theoretic view of translating and specifically applies Sperber and Wilson's theory to simultaneous interpreting (see 3.6.5 below for further details).

In this chapter, we have presented three different models of speech production taken from studies in psycholinguistics and neurolinguistics. We have discussed the place of the monitor in these models and opted for the main aspects of the perceptual theory of monitoring as posited by Levelt (1989: 470) with some aspects of the production theory of monitoring proposed by Laver (1973) and Van Wijk and Kempen (1987). Then, we looked at the occurrence of repairs in speech production, presented different theories and proposed a way of categorising the examples on the basis of Levelt's study (1983, 1989). Finally, we focused on speech reception by incorporating the interpreting process in a pragmatics dimension. We saw that interpreting needed to be looked at in its context. Before going further, we now need to look closer at the simultaneous interpreting situation. In the next chapter, we will focus on different models of interpreter behaviour. First we will look at the process itself and describe the different aspects which are significant and will have a bearing on our study of repairs in simultaneous interpreting.

### 3.1 Description of the simultaneous interpreting situation

Simultaneous interpreting can be described as a professional service used at international conferences in order to facilitate communication between a speaker who produces an utterance in one language and an audience who does not comprehend this language.

Simultaneous interpreting is a subdivision of the umbrella term conference interpreting and differs from the second main mode called consecutive interpreting, where the interpreter listens to the speaker, takes notes and renders the original speech into another language.

Simultaneous interpreting, as we know it today, is a rather new mode of interpreting and has only really existed since the end of the Second World War. It is now taken for granted but when it was first introduced, simultaneous interpreting was feared by consecutive interpreters who thought that it could not be as accurate as consecutive interpreting. Simultaneous interpreting was invented in order to save time and allow interpretation of more than one language at one time (for a more detailed account, see Gaiba, 1998). It involves a complex cognitive process of concomitant activities, which have been of interest to various scholars (for a more detailed account, see 3.3-3.6 below).

At a conference, the interpreter sits in a soundproof booth<sup>22</sup> overlooking the conference room, receives the speaker's input via headphones and utters an output into a microphone for the benefit of the audience who, in turn, can listen through headphones on a dedicated channel. The audience can simply switch from one channel to another either to listen to the original input or to one of the designated languages. Some interpreters wear their headset in such a way that they only listen to the input with one ear or have the headset on both ears but half on and half off. This enables them better to monitor their own output (for more research results, see Lambert, 1994). If the technical equipment is not available, the interpreter can 'whisper' (*'chuchoter'*) the interpretation into the listener's ear. As the only mode of

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<sup>22</sup> For a more detailed account of working conditions, see Jumpelt, 1985.



interpreting of interest in our study is full simultaneous interpreting, we shall not dwell upon 'whispering' or consecutive interpreting (for a more detailed account, see Jones, 1998).

In the booth, the interpreter sits with at least one other colleague, sometimes two, in order to be able to alternate every 20 to 30 minutes. This is due to the complexity of the task and its heavy load on the interpreter's processing capacities combined with a wish to produce an output of high quality. In the booth, the interpreter may have access to documents, for example dictionaries, terminology databases or even conference speeches or speakers' papers. However, the simultaneous interpreting task limits the use of such documents. Another form of help may be the colleague who can, while the other is working, take down some notes on a jotter. Again this help is limited and requires perfect understanding between the two interpreters, as it is impossible to utter any sounds while the working interpreter's microphone is live.

As already stated, the only mode of conference interpreting which will be used in this study is simultaneous interpreting. Therefore, when we refer to 'interpreting', it should be understood as 'simultaneous conference interpreting' throughout the study and not any other mode of interpreting.

In the following section, we will start by expressing a caveat about the application of the notion of repair to simultaneous interpreting. We shall then look at the literature on interpreting research, beginning with the early work of conference interpreters, the experiments carried out by psychologists and the research of so-called "practisearchers" (Gile, 1994: 150). Finally, we will present different interpreting models.

### **3.2 Notion of repairs applied to simultaneous interpreting**

The majority of scholars who have carried out research on repair mechanisms are based in such disciplines as cognitive sciences, linguistics, psycholinguistics, sociolinguistics and cognitive psychology, to mention only a few. In most cases, the notion of repair has been applied to conversations or spontaneous speech (see for example Schegloff *et al.*, 1977;



Levelt, 1983, 1989; Van Wijk and Kempen, 1987; Blackmer and Mitton, 1991). It seems legitimate to wonder whether the theories developed in the fields mentioned above can be applied, as they stand, to the study of repairs in simultaneous interpreting. Moreover, the work carried out on repairs to date has been mostly based on English data (eg. Blackmer and Mitton, 1991) or a single language (eg. Dutch in Levelt, 1983, 1989 and Van Wijk and Kempen, 1987; German from the Meringer corpus, 1908 in Nooteboom, 1980 and German in Berg, 1986a or French in Brédart, 1991). It is therefore important to consider whether these theories can be applied to the specificity of simultaneous interpreting, where more than one language is involved in the process and where the interpreter is both a producer and a receiver of speech.

### **3.3. Early studies of simultaneous interpreting**

In the years following the Second World War the practice of simultaneous interpreting gave rise to several publications which were of a practical nature. Conference interpreters like Herbert (1952), Rozan (1956), Ilg (1959) and Van Hoof (1962) published their personal insights after having gained their experience at international conferences where simultaneous interpreting was used as a new medium of communication. While Herbert and Van Hoof focus on consecutive and simultaneous interpreting, explain their different perspectives and give practical advice for the newcomers to the profession, Ilg concentrates on the teaching of interpreting and Rozan gives a detailed account of consecutive interpreting.

Although all these publications are pre-theoretical and are not based on any empirical analysis of corpora, they nevertheless focus on important aspects of interest to conference interpreters. Even if they did not claim any scientific validity, issues raised in these publications, such as for example note taking in consecutive interpreting or ethics, are still under discussion today (see for example Jones, 1998).

### **3.4 Psychological experiments**



In the 1960s and 1970s, psychologists and psycholinguists found an interest in the study of simultaneous interpreting. They carried out experiments to find out more about this very complex and fascinating cognitive activity. Alongside Paneth (1957), who wrote the first academic thesis on simultaneous interpreting, researchers like Oléron and Nanpon (1964), Treisman (1965), Goldman-Eisler (1967, 1968, 1972a, 1972b) Barik (1971a, 1971b, 1973, 1975) and Gerver (1969, 1974a, 1974b, 1976) conducted research on simultaneous interpreting tasks. They were interested in various topics linked with interpreting, as divided attention, segmentation of input and time-lag (ear-voice-span or EVS) which concerns the time between the interpreter's reception of the original speaker's input and the interpreter's production of an output. It seems important at this juncture to elaborate slightly on these experiments as they had some influence on the work of researchers later on.

Although Paneth's (1957) first aim was to investigate the possibility of having some training for interpreters in England, she also studied the 'technical problems' associated with conference interpreting. She studied the time lag in simultaneous interpreting and found that it could be "between 2 and 4 seconds, involving 15-21 words" (Paneth, 1957: 5). She also looked at the way interpreters segment their speech, observing that they sometimes make use of the speaker's pauses in order to speed up their own delivery of the message. Her data were authentic but she did not give any details about which measurement or method she used to come to her results. In her thesis, she mentions the existence of some kind of repairing function: "A great many interpreters are only happy when their quick delivery ensures them a great deal of time in hand for corrections, amplification"(Paneth, 1957: B: 10). She (*ibid.*, B: 11, 12) also gives further evidence when she states that the interpreter:

"seems to be more conscious of his speaking than of his listening, as in good and fluent performances corrections of clichés or slips (Bestätungen/Bestätigungen) are frequently heard (...) It is a very usual trick one's mind plays in such an atmosphere of interpretation-suggesting alternatives for everything that anybody says".

She further quotes Kaminker, a renowned interpreter, who surprisingly claimed that the interpreter never understands what is being said and adds (*ibid.*, B: 13):



"That he is often, even in a good performance, conscious of what he himself says, we have seen proved by corrections simultaneous interpreters insert into their speech. A negative statement that he does not understand what he hears, is from its nature less amenable to proof".

Paneth refers here to interpreters who translate but claim not to know afterwards what the speaker said or even 'write letters' while interpreting, in other words do not need much concentration in order to perform the task or are able to divide their attention accordingly. Paneth claims therefore that there are three types of simultaneous interpretation:

- 1) "a parallel commentary of what is being said (in the case of a technical text). The interpreter will work phrase by phrase.
- 2) a conscious simultaneous interpretation where the interpreter follows what is being said and interprets with a small time-lag. He can consider and criticise the translation.
- 3) an unconscious simultaneous interpretation where the interpreter can concentrate on another task while his interpretation goes on" (adapted from Paneth, 1957: B: 15).

However, she seems to contradict herself when she explains the so-called "conscious simultaneous interpretation" and states (*ibid.*: B: 15) that:

"With his attention on the material supplied to him, the interpreter relaxes and lets it flow through him and come out in the language to which he has switched at the beginning. He does not give it any thought and could not reproduce it afterwards".

Yet, can an interpreter "criticize the translation" and at the same time "not give it any thought"? In a later article, Paneth also seems to contradict the existence of a monitoring process. She explains (1962: 102) how the simultaneous interpreting process takes place:

"There is of course no time for a consideration of the version to be produced. The absolute automatism of the translation, the ability to produce an immediate French



configuration of a thought taken in in English, is a precondition of the functioning of the interpreter".

She calls interpreting a "trance-like translation process"(Paneth, 1962: 102) but does not mention the possibility of any monitoring taking place during the process. In fact, she claims that the interpreter does not have the time for it: "Apart from the fact that his functioning may not leave him time for considering the contents, (...) " (*ibid.*: 104).

Oléron and Nanpon (1964) were interested in ear-voice-span (EVS) and the quality of a performance. They carried out experiments with simultaneous interpreters using UN sessions and data collected in a laboratory using UN speeches as well as literature. They recorded their interpreters on dual-track tapes and found that the interpreter needs some material before starting the translation. The time lag can range from two up to 10 seconds, determined by the difficulty of organizing the incoming material. However, according to them, the interpreter cannot lag too far behind the speaker because of short-term memory limitations. It is interesting to note that Oléron and Nanpon's results differ from Paneth's calculation of the EVS (two to four seconds).

Treisman (1965) studied the effects of 'sequential constraints' on two different tasks: shadowing<sup>23</sup> and interpreting exercises. Instead of using interpreters for her experiments, she used bilinguals and other subjects whose mother tongue was either French or English. Therefore, her real interest in simultaneous interpreting can seem debatable even if the process might be similar. In her study, she compared the effect of redundancy of the source language message on ear-voice-span and the quality of the performance. She found that the EVS was longer for interpreting than for shadowing and that the 'increased decision load' imposed on simultaneous interpreting explained the fact that the interpreting task seemed to be more difficult than the shadowing one (Treisman, 1965: 369).

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<sup>23</sup> "Shadowing is (...) repeating word-for-word, and in the same language, a message presented to a subject through headphones " (Lambert, 1988: 377).



Another study is by Lawson (1967) who worked on attention in simultaneous interpreting. She carried out experiments with different subjects who were not professional interpreters. She asked them to translate a message they received in one ear while another irrelevant message was fed into the other ear, either in the same or in the other language of the experiment. She used English and Dutch literary texts taken from different sources. She found that there were no intrusions from the wrong passage and that there were more omissions in the output when the input was in the same language than when it was in different languages (Lawson, 1967: 29). Unfortunately, she could not draw any final conclusions because another experiment with material taken from a different book gave different results.

Goldman-Eisler (1967) researched patterns in speech production and planning. She examined the temporal patterns of speech and pausing and carried out experiments using different types of data, i.e. spontaneous speech, reading of prepared texts and simultaneous interpreting of texts from and into English, French and German. She found that the "rhythmic property could be detected in all three conditions when pausing constituted at least 30 percent of the total time spent in speaking and pausing" (quoted in Gerver, 1976: 171). Her results were later criticized in terms of the method used and their validity (for more details see Gerver, 1976: 171).

In a later article, Goldman-Eisler (1972a) carried out experiments on the segmentation of input in simultaneous interpreting, in other words the length and nature of segments (EVS) and the way the interpreter segments the input (chunking theory). For the first part, she found (*ibid.*: 131) that "on the whole, interpreters depend on information of a structural nature before they can start their translation", the ear-voice-span contains between four and five elements, which are similar results to those of Treisman's study (1965). In her work on the nature of segments (EVS), she stressed the major differences between the languages she used in her experiments (French, English and German). She found for example that "(...) in translating from German, a larger chunk has often to be stored before starting translating than in English and particularly French" (Goldman-Eisler, 1972a: 133). This result might be of interest for our own corpus (see chapter 4 for further details), because of the position of the verb in



German, a language included in the corpus. On the subject of chunking, Goldman-Eisler (1972a: 128) claims that:

"The situation of simultaneous translation is such that the conference interpreter must continuously monitor, store, retrieve, and decode the input of the source language while at the same time recoding and encoding the translation of the previous input".

She (*ibid.*: 134) also explains that:

"The process is such that the interpreter first monitors and stores, and then encodes in the target language (...). During this period, the source may continue his utterance which again must be monitored and stored by the interpreter and subsequently encoded. This encoding proceeds after a certain sequence is monitored, and so on. Simultaneous translators sometimes cut into the source's continuous vocal input; at other times they may continue to monitor two or more input chunks, and encode them in one continuous sequence".

A year earlier, Barik (1971a, 1971b) studied the differences of behaviour and mode of operation between several groups of interpreters, i.e. professionals, students and amateurs, and he focused both on the quantitative as well as the qualitative aspect of the interpretation process. The lack of other experimental studies prior to his work might explain the fact that his results seem quite self-evident. He found that interpreters lag behind the speaker by two to three seconds. He also studied different types of 'departures' from the original: omissions, additions and errors and proposed a way of categorizing them. He found for instance that the more-qualified interpreters made fewer omissions than less-qualified interpreters (an average of two to four per 100 words, i.e. five to 10% compared with six per 100 words, i.e. 20 to 25%). In general, he found very few additions in interpreted texts and in terms of errors, the experiment showed that more-qualified interpreters made around three errors per 100 words while less-qualified interpreters made about four errors per 100 words (Barik, 1971b: 207-210).



In a later article, Barik (1973) looked at the temporal characteristics of simultaneous interpreting and sought to highlight the quality of the interpreter's output influenced by three elements, i.e. the interpreter's experience, the type of material and the language direction. He found that, in general, translated speech presents the same patterns as natural speech but is less rhythmical. Interpreters speak for a longer period of time than the speaker does. More interestingly, he focused his study on the pauses in speech and found out that the interpreter was taking advantage of the speaker's pauses and so reducing the time during which he must both listen and speak at the same time. We will see in chapter 4 that this point can be relevant to our own corpus. Moreover, his experiments seem to correspond to other researchers' results in terms of time lag, i.e. two to three seconds. However, Barik's temporal data did not reveal any major differences in terms of the different categories of material he used and the direction of translation.

Gerver (1969, 1974a, 1976) carried out experiments to shed light on the source language input rate and its influence on interpreting performance. He used both shadowing and interpreting tasks and found (Gerver, 1976: 172) that "the proportion of the text correctly shadowed decreased significantly at input rates of 142 and 164 words per minute while the amount correctly interpreted decreased with each increase in input rate". He also observed that shadowers "kept the same ear-voice-span (EVS) of 2 and 3 words at all input rates while interpreters' EVS increased from five words at 95 words per minute to an average of 8½ words at 164 w.p.m.". In his experiments, he also examined the transcripts for "omissions, substitutions, additions and distortions of words, i.e. corrections" (*ibid.*, 1969: 163). He found that the speed of input rate contributed to an increase in disfluencies; in other words as the input rate sped up, more disfluencies were observed.

Later, Gerver (1974a) used different listening conditions in his experiments and studied the effect of the speaker's speed of delivery on the interpreter's performance. With shadowing and interpreting exercises he showed the simultaneity of the listening and speaking task. His results show that most of the time (in 75% of cases), the interpreters could perform the simultaneous task without too many problems (Gerver, 1974a: 338). More mistakes occurred during interpreting than during shadowing. Gerver (1974b) also looked at the effect of noise



on simultaneous interpreters' performance by asking subjects to shadow and simultaneously interpret French prose into English. He found that noise had a significant effect on the parts of the text which were correctly shadowed and interpreted. His subjects committed more errors when interpreting than when shadowing. Following an analysis of the subjects' self-corrections, Gerver (1974b: 159) concludes that the "difficulty in perceiving source language passages reduces the ability of simultaneous interpreters to monitor their interpretations into the target language".

Gerver was also interested in the effect of noisy listening conditions on the audience who is listening to simultaneous or consecutive interpreting and the retention of information in both modes. He carried out experiments to compare the two and found that there were not many differences between the two. After then having observed the audience's capacity to retain information, he noticed that the scores obtained were higher in the case of consecutive interpreting than in the case of simultaneous interpreting (Gerver, 1976: 177). This shows that noisy conditions during simultaneous interpreting, i.e. the interference of the speaker and the interpreter speaking at the same time is detrimental to the retention of information by the audience. A last topic which Gerver researched was the segmentation of the input. Based on work done by Suci (1967) Gerver wanted to show how interpreters use the source language pauses to segment the output. His results showed that pauses do help interpreters in segmenting the output (Gerver, 1976:179, 180).

It is important to note that the results obtained by these psychologists and psycholinguists were later heavily criticized by interpreters. It was argued that the studies were probably neither "valid nor representative because the number of both researchers and studies was small, with very few replications of experiments" (Gile, 1994: 149). Nevertheless, the different experiments do shed some light on subjects like ear-voice-span, speed of delivery, noise, selective attention, chunking, to name a few. The time constraint, or speed of delivery, is set by the original speaker and the interpreter has no control over it (see Shlesinger, 1995). This element is of interest to our own study as it is bound to have an influence on the occurrence of repairs in interpreting. The EVS is also of importance in the processing of information. As Hatim and Mason (1997: 62) put it: "in general terms, the shorter the EVS,



the closer will the translation adhere to the form of the source text". It is therefore possible to hypothesize that the EVS will have an influence on the existence of repairs in the interpreter's output. More specifically, we can think that the shorter the EVS, the less processing time the interpreter will have at his/her disposal, and hence less opportunity to repair the output. This will need to be verified in the analysis (see sections 4.4 and 4.5 below).

### 3.5 Interdisciplinarity and conference interpreters

In 1986, the 'Scuola Superiore per Interpreti e Traduttore' of the University of Trieste organised a conference on the theoretical and practical aspects of teaching interpretation. This marked the beginning of what Gile calls "the Renaissance period" (Gile, 1994: 151). This period, and more precisely the Trieste school itself, are characterized by the predominance of interdisciplinary work and research being carried out by practising interpreters. We will try to summarize here some of the results obtained by the neuropsychological approach adopted mainly in Trieste but also by other researchers (see for example Lambert in Canada and Kurz in Austria).

Using dichotic listening-exercises<sup>24</sup>, Fabbro, Gran and Gran (1991) carried out experiments in order to find out more about the hemispheric specialization for semantic and syntactic components of language in simultaneous interpreters. They asked professional interpreters and interpreting students to listen simultaneously to sentences in the source language through one ear (either right or left) and to the same sentences translated into the target language

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<sup>24</sup> "Dichotic listening is a noninvasive experimental method for the study of hemispheric asymmetries for linguistic functions. This technique can only be used for language recognition and comprehension tasks. It is considered to provoke an unnatural activation of the nervous system, as the tested subject is obliged to listen to two different verbal stimuli, one coming through the right ear and the other through the left ear" (Fabbro *et al.*, 1991: 12).



through the contralateral ear (either left or right). The target language sentences were either correct translations or contained a semantic or syntactic error. They asked their subject to recognize the error and then later to name it. They found that both groups had a higher score of correct sentence recognition (83%) compared with sentences containing semantic errors (64.5%) or syntactic errors (38%). They concluded that interpreters are trained to recognize meaning rather than syntax. Although there was no major difference between professional interpreters and interpreting students in the recognition of correct sentences, the former obtained higher scores in the recognition of semantic errors while the latter recognized more syntactic errors (Fabbro *et al.*, 1991: 12-13).

This study is rather interesting as it sheds light on the interpreter's use of divided attention. More importantly for our own study, the Trieste school recognizes the existence of some kind of monitoring:

"In addition, there is constant auditory monitoring of the input in the source language and of the output in the target language, as the interpreter checks whether the content and the linguistic style of his/her outgoing message match the original discourse and whether his/her own voice is expressive and pleasant" (Fabbro *et al.*, 1991: 4).

According to Darò (1992: 5) who studied hemispheric lateralization using neuropsychological experiments, simultaneous interpreters listen to the input using their left ear in order to be able to monitor their own output:

"In der Tat pflegen viele Dolmetscher nur mit dem linken Ohr auf den Ausgangstext zu hören, um mit dem rechten Ohr ihren eigenen Text zu überprüfen, (...) was auf eine erhöhte Beteiligung beider Hemisphären hindeutet".

In another article, Lambert, Darò and Fabbro (1993) studied the role of attention during simultaneous interpreting. They (1993: 381) state that: "divided attention occurs when a subject is asked to monitor two or more tasks". They (*ibid.*: 381-382) claim that there are



three hypotheses to explain the ability to divide one's attention on different synchronous tasks:

- "1) the extra effort hypothesis, where the increased resources needed to carry out concurrent tasks require an increased effort on the part of the subject;
- 2) the alternation of attention hypothesis, where subjects do not carry out the different tasks in a rigorously concurrent way, but rather where they learn how to rapidly shift back and forth from the processing of one task to the processing of another task;
- 3) the automatic mental activities hypothesis: after acquiring the ability to carry out a task involving divided attention, there is no need to monitor every single mental activity through a central processing system, since some of these activities can be carried out automatically".

They asked 16 professional interpreters to interpret easy and difficult texts under four different conditions and wanted to shed light on focalized attention during simultaneous interpreting. Their results show that the interpreters' performances did not improve when asked to focus either on the input or on the output. It also shows that it can even be "detrimental to general, or more natural production" (Lambert *et al.*, 1993: 386). Therefore, Lambert, Darò and Fabbro (1993: 381) conclude that the series of complex tasks inherent to simultaneous interpreting become somehow automatized for professional interpreters: "(...) we suggest that among professional interpreters, monitoring of input and output is an automatic and unconscious process". This finding is of interest to our own corpus of professional conference interpreters. However, in a later article, Fabbro and Gran (1997: 10) seem to contradict this by saying that:

"(...) the voluntary monitoring of the interpreter's own production and the self-judging of his/her performance while it is being realized, are all examples of non-automatic, explicit cognitive strategies".

This last statement corresponds to Levelt's theory of the monitoring function (see 2.2 above for further details).



In a study on the different skills required in simultaneous interpreting, Darò (1995: 3) lists the "division of attention, phonological interference and Delayed Auditory Feedback". The latter is used to study the disrupting effects on one's own verbal production. Darò reports that "listening to one's own verbal production while it is fed back via headphones with a delay of 150 to 250 msec, provokes dysfluencies in speech" (*ibid.*: 5). So she wonders how simultaneous interpreters can overcome this interference. Other experiments carried out with interpreters did not show any significant speech errors or dysfluencies. Darò (*ibid.*: 5) states:

"(...) simultaneous interpreters are able to overcome interferences between the verbal components involved during listening to the SL and those involved in feedback systems accounting for monitoring the output in the TL".

A colleague of Darò's who is taking an interdisciplinary approach is Lambert (1988). She studied the processing of information by interpreters using different tasks: listening, shadowing, simultaneous and consecutive interpreting. Her 16 subjects (eight professionals and eight trainees) performed all four tasks and were asked to recall the processed information immediately afterwards. In the results of the experiment she demonstrates that both listening and consecutive interpreting showed better recall of information than shadowing and simultaneous interpreting. Lambert explains that it is due to the vocalization involved in the last two tasks. This also shows that there is a deeper processing of incoming material during listening and consecutive than during simultaneous and shadowing. In other words, Lambert's results show that simultaneous interpreters yield a lower semantic recognition score. This seems to corroborate what Kaminker was implying when he said that "interpreters never understand what they say" (see earlier in 3.4; this is also supported by Darò, 1994: 265). In a later article, Lambert (1994: 325) carried out research on the use of the right and left hemisphere and suggested that:

"(...) interpreters consciously or unconsciously use their left hemisphere (right ear) for what they consider to be the more critical of the two concurrent tasks, namely



monitoring his/her own output, and the right hemisphere (left ear) for processing the incoming information".

All researchers mentioned above come from various disciplines and attempt to combine their experiences in order to shed light on the interpreting process. They all recognize the existence of a monitoring function during simultaneous interpreting and shed light on the interpreter's divided attention. The cooperation between sciences and interpreters has proven extremely useful and shows that interpreting studies can learn a lot from other disciplines. In the following section, we shall look at various models proposed by scholars in interpreting research over the years. We will note the differences of approaches and highlight what could be useful for our own purposes.

### **3.6 Different models in simultaneous interpreting; notion of monitoring and self-correction**

In this section, we will present different models of the simultaneous interpreting process. First, the so-called Parisian school with their 'théorie du sens', then two different information processing models followed by a processing capacity and a cognitive pragmatics-based model. Although all these models are of importance in our review of the research carried out in simultaneous interpreting, we will try to cast a critical eye on them paying special attention to their account of the notion of monitoring and repair.

#### **3.6.1 The ESIT school: 'la théorie du sens'**

In the late 1960s in the ESIT school in Paris, Seleskovitch, a practicing interpreter and interpreter trainer, developed the 'théorie du sens' (also called "the interpretive theory of translation", see Setton 1999: 38) which she applied to consecutive interpreting (Seleskovitch, 1975). Later, Seleskovitch's colleague, Lederer, used the 'théorie interprétative' to explain the complex activity of simultaneous interpreting (Lederer, 1981). In this section, we will look at this theory and summarize its main tenets in view of monitoring and repairs in interpreting.



Seleskovitch based her theory on her professional experience and her interest in teaching the theory and techniques involved in interpreting. She argues that interpreting does not mean a word-for-word translation of a text into another language. According to her, therefore, interpreting should not be seen as mere linguistic transcoding, i.e. literal translation of discrete segments but interpreting is a much more complicated activity: "Si l'on pouvait, comme le croient encore tant de délégués aux réunions internationales, 'répéter' dans une autre langue les mots de l'original, l'interprétation simultanée serait un jeu d'enfant" (Seleskovitch, 1968: 33)<sup>25</sup>. In her definition of interpreting, Seleskovitch (1968: 34) concentrates on the 'meaning' not on the 'words' and claims: "(...) elle n'est pas traduction orale de mots mais elle dégage un sens et le rend explicite pour autrui; c'est une exégèse et une explicitation"<sup>26</sup>.

She does not propose any chart but summarizes her interpreting model in three stages (*ibid.*: 35):

- "1. Audition d'un signifiant linguistique chargé de sens; appréhension (domaine de la langue) et compréhension (domaine de la pensée et de la communication) du message par analyse et exégèse;
2. oubli immédiat et volontaire du signifiant pour ne retenir que l'image mentale du signifié (concepts, idées, etc.);
3. production d'un nouveau signifiant dans l'autre langue, qui doit répondre à un double impératif: exprimer tout le message original, et être adapté au destinataire".<sup>27</sup>

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<sup>25</sup> If it was possible, as many delegates at international conferences still think, to 'repeat' in another language the words of the original, simultaneous interpreting would be extremely easy (my translation).

<sup>26</sup> It is not an oral translation of words but it releases a meaning and makes it explicit for others; it is an analysis and and explicitation (my translation).

<sup>27</sup> 1.Audition of a linguistic signifier loaded with meaning; apprehension (language level) and understanding (thought and communication levels) of the message through analysis; 2.Immediate and intentional forgetting of the signifier to only keep the mental image of the signifier (concepts, ideas, etc.); 3.production of a new signifier in the other language, which needs to fulfill two criteria: to express the whole message contained in the original and to be adapted to the addressee (my translation).



In her seminal thesis, Seleskovitch analysed consecutive renditions of two English speeches of around seven minutes each by 12 professional interpreters working into French (their A language). Interpreters were subsequently asked to comment on their notes. The absence of faster and wordier than the original (for a more detailed account of Seleskovitch's thesis, see Setton, 2002).

According to Seleskovitch (1976) it is obvious that the oral translator (i.e. interpreter) needs to understand the meaning of what has been said before being able to translate it into another language. This is in contradiction with what Lambert (1988) found in her study (see 3.5 above for further details). According to Seleskovitch (1976: 111) speech perception occurs as follows:

"It is stored by the interpreter partly in the formal memory, partly in the semantic memory, either in toto (...) or segment by segment (...) before being rendered. During the memory span within which the speech segments are still materially present in their acoustic shape, the interpreter performs a fantastic sorting process: a tiny portion of the speech segments is processed and stored in the form of language units, whereas the major part of the language segments are processed for content, transformed into mental representations, and stored in the semantic memory".

The main point of Seleskovitch's model is the existence of this 'mental representation' stage. Indeed, she claims that the interpreter 'forgets' the wording of the original and only remembers the 'mental image' or 'concept'. She (1975: 7) explains this stage by saying:

"Toute personne qui ouvre la bouche pour parler a en elle un vouloir dire dissocié des structures linguistiques; toute personne qui appréhende la parole d'autrui libère le sens transmis par les mots. Dans toute communication orale, la parole se fait pensée non-verbale, et la pensée non-verbale se fait parole"<sup>28</sup>.

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<sup>28</sup> Anyone who opens his/her mouth to speak has, in him/herself, a Speaker-meaning which is independent of linguistic structures; anyone who grasps the speech of others, frees the meaning sent by the words. In any oral communication, speech becomes non-verbal thought, and non-verbal thought becomes speech (my translation).



This phase of 'forgetting' the original wording is called 'déverbalisation'. According to Seleskovitch (1990: 531-532), this phenomenon is not restricted to oral translation:

"Le phénomène de la déverbalisation, apparent dans le discours oral n'est pas moins vrai de l'écrit. Les signes linguistiques que l'oeil cesse d'embrasser se déverbalisent eux aussi en fusionnant avec les connaissances qu'ils éveillent"<sup>29</sup>.

The 'deverbalisation' occurs between the perception of the original and the production of the new message. The only element, which remains, is the 'meaning', leaving behind any kind of linguistic wording<sup>30</sup>. Or as Seleskovitch (1975: 7-8) herself puts it: "(...) une étape intermédiaire pendant laquelle le signifiant disparaît alors qu'interviennent des mécanismes cérébraux non linguistiques"<sup>31</sup>. Deverbalisation is the core of the interpretive theory of translation. According to the 'théorie du sens', we can remember a story being told but not the words used in order to do so. In other words, speech sounds disappear with the voice but both listeners and interpreters keep a deverbalized memory of it (see Lederer, 1994: 22).

After the deverbalisation, the interpreter has to produce the new interpreted message. This gives the interpreter distance from the actual wording of the original message, the interpreter now finds he can be in the same situation as the speaker before he spoke. According to Seleskovitch, it gives the interpreter the possibility of being more precise and perhaps clearer than the speaker is (Seleskovitch, 1968). Because this new 'interpreter' version is the expression of an idea (and not of words), Seleskovitch claims that this new version does not depend on the foreign language. We will see later the implications of this statement.

By suggesting a language-free theory of oral translation, Seleskovitch does not envisage the possibility for the interpreter to repair the output. As long as the interpreter can avail of the

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<sup>29</sup> The deverbalization phenomenon which is noticeable in oral speech, also happens in written text. Linguistic signs that the eye stops to grasp are also deverbalized by merging with the knowledge they trigger (my translation).

<sup>30</sup> See also accounts of speech reception in section 2.6, for example Garnham (1985: 4) who claims that "the language understanding system extracts the content of incoming sentences and constructs a representation of the situation to which they refer", and see Clark and Clark (1977) in the same section.

<sup>31</sup> An intermediate stage during which the signifier disappears, while non-linguistic mental mechanisms take place (my translation).



required linguistic and extralinguistic knowledge and 'deverbalises', i.e. extracts the meaning of the message and only keeps the concept or the idea in mind before rendering it into another language, the interpreter should not face any difficulty. Therefore, not only is there no difference between language pairs but there is no need for any kind of repair.

Seleskovitch's 'théorie du sens' sounds rather dogmatic considering the limited corpus of consecutive interpreting data she used in her own thesis (see Seleskovitch, 1975: 179-181); also see below for further criticisms).

Lederer (1984) applied the 'théorie du sens' to a 63-minute corpus of German-French interpretation of a three-hour meeting. She used the recordings of two German-French interpreters but also asked them afterwards to interpret the parts of the meetings they had not interpreted *in situ* because of the rotation of work in the booth (see section 3.1). In her study, she proposes the three following phases in the simultaneous interpreting process: "(...) la perception, la conceptualisation, l'énonciation" (Lederer, 1984:137).

During the first phase (perception), the interpreter perceives the speaker's message. The more the interpreter knows about the subject, the more he will be able to take it on board and make it understandable for the audience. The phase of conceptualization is 'the listener's cognitive integration of linguistic and non-linguistic elements'. Finally, the 'énonciation' (articulation) takes place (see Lederer, 1984). Lederer (1984: 140) follows Seleskovitch's phase of deverbalization and claims that:

"(...) qu'il s'agisse de l'auditeur 'naturel' ou de l'interprète. Tous deux, du discours oral, retirent le sens des messages qui leur parviennent tandis que les formes linguistiques des messages se dissipent"<sup>32</sup>.

Like that of Seleskovitch, Lederer's work is based on the meaning of the message. The interpreter forgets the words he just uttered but not the information he understood and rendered (Lederer, 1984: 143). During the last phase of expression, the interpreter needs to

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<sup>32</sup> ...be it the 'natural' listener or the interpreter. Both remove, from the oral speech/discourse, the meaning of messages that they hear, while the linguistic forms of messages fade away (my translation).



be free of the source language formulations in order to be able to render the ideas in an idiomatic way. Unlike Seleskovitch, who mainly rejects the idea, Lederer admits the possibility of the interpreter using some transcoding on some particular occasions, i.e. for figures, proper names, technical terminology, the beginning of a speech or an idea being expressed. According to her: "ces éléments doivent être transcodés: ils passent directement de la langue d'origine à la langue d'arrivée sans obligatoirement transiter par la conceptualisation"<sup>33</sup> (Lederer, 1984: 151). The transcoding process is not effortless for the interpreter, who needs to change his listening mode and adapt it accordingly. From the analysis of the meaning, the interpreter will need to concentrate on the transcoding to then go back to the deverbalsation of the input (Lederer, 1984).

In her model, Lederer seems to go further than Seleskovitch. She suggests the existence of eight operations, which are divided into three different categories. First, a category of continuous and successive operations where the interpreter hears, understands and conceptualizes – in other words, builds a cognitive memory and enunciates from that memory. Secondly, a category of permanent but not always visible operations where the interpreter is aware of the situation and can self-monitor. Finally, a category of occasional operations where the interpreter can transcode and retrieve specific terminology (see Lederer, 1981: 50).

The interesting point for us in the various categories of operations is the so-called 'contrôle auditif' or self-monitoring function. Lederer includes it in the second category of constantly but not always visible – operating mechanisms. According to her, interpreters, just like speakers, hear themselves and can therefore regulate what they say according to the correct usage of language. This 'post-monitoring' function happens consciously so that it can possibly lead to a repair. Lederer, however, limits the application of the monitoring function to the occurrence of 'errors' and 'corrections' (see Lederer, 1981: 103-104).

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<sup>33</sup> These elements have to be transcoded: they go directly from the source language to the target language without necessarily passing through conceptualization (my translation).



Lederer applies this definition to her corpus and observes different instances where first, the interpreter 'corrects' his utterance by adding something, which was not in the input, and hence improves the output. She also quotes repairs made by the original speaker, either slips of the tongue or instances where the speaker repairs his utterance on the basis of what he remembered having said earlier on. Lederer also adds anticipation to the 'monitoring function'. She explains that interpreters often anticipate what the speaker is going to say and therefore they then monitor what they think is going to be uttered with what the speaker actually says (Lederer, 1981: 104). Lederer's account of the 'contrôle auditif' is interesting as it takes care of some categories of repairs we will develop in the analysis: her account however does not cover all types of repairs found in our corpus. Moreover, she describes instances in a general way without making a distinction between the speaker's and the interpreter's repairs, which needs to occur in a simultaneous interpreting situation, we would suggest.

Following the same interpretive theory, Déjean Le Féal (1981: 84), another member of the ESIT-school, proposes three phases in the consecutive interpreting process which she applies to simultaneous: "l'écoute, la mémorisation des contenus cognitifs et la réexpression"<sup>34</sup>.

Within the third phase of 'réexpression', she includes a so-called 'autocontrôle' which she defines as follows: "j'entends par autocontrôle l'écoute attentive par l'interprète de ses propres paroles, afin de s'assurer qu'elles correspondent bien à son vouloir dire"<sup>35</sup>. This allows the interpreter to 'correct' his expression and find the appropriate term. Déjean Le Féal also adds another element when she mentions the possibility of an interpreter working into a foreign language. According to her, the 'self-monitoring' would allow the interpreter to 'correct the linguistic aspect of an output'. This is to be practiced by the trainee who will then use it as a reflex. Again here, the monitoring function is seen as a means of correcting mistakes, slips of the tongue or improving the idiomaticity of a first solution. Like Lederer's account of the monitoring function, Déjean Le Féal's does not take into consideration some instances, which will come out in our corpus, as we will see below.

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<sup>34</sup> Listening, memorising of cognitive contents and re-expressing (my translation).

<sup>35</sup> What I mean by self-monitoring is the attentive listening by the interpreter of his/her own utterances, so that he/she can be sure that they do correspond to his/her Speaker-meaning (my translation).



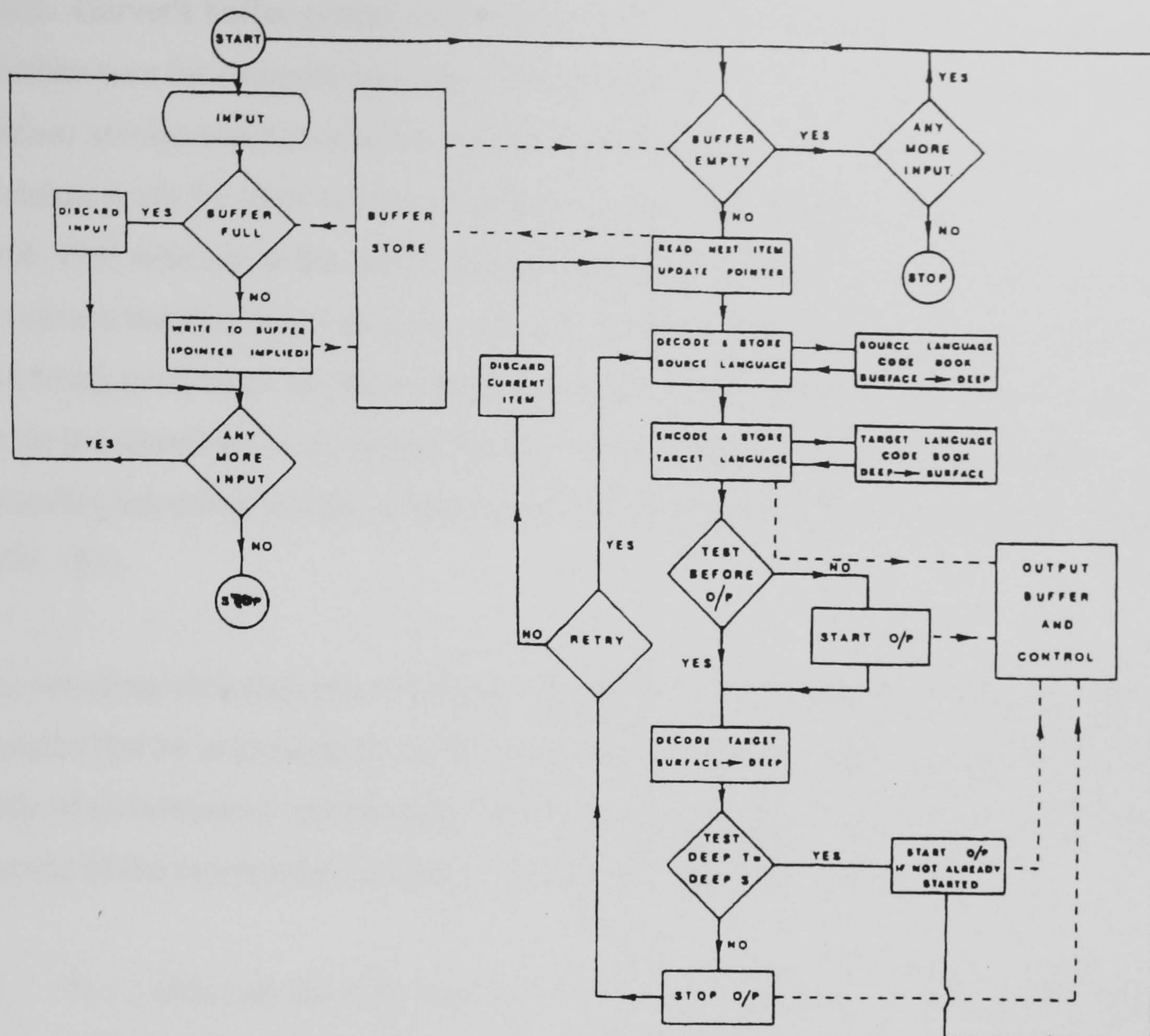
Neither Seleskovitch nor Lederer duplicated their research with other data nor did they try to posit any hypotheses. Consequently, although their accounts were invaluable at the time and are still discussed today, the validity of their results is highly questionable. It seems also interesting to note that this interpretive theory of translation is not exactly new. As Pöchhacker (1994: 22) puts it, Wirl (1958) was already talking of oral translation as being based on the rendering of a source text meaning freed from wordings, in other words what Seleskovitch later on called 'deverbalisation'. Sachs (1967) conducted an experiment where subjects were asked to read a text passage and were tested for a critical sentence in the passage at various time intervals. The results show that we quickly lose information about the actual verbatim string of words that we hear, especially the word order, but we do retain the words' overall meaning.

The 'théorie du sens' has been criticized by many scholars. Most of them recognize the importance of the theory and admit that it still prevails today but claim that it has never been empirically proven, is too speculative and normative and lacks quantification of data (for some accounts see Gile, 1990b, 2000, Dam, 1998). Nevertheless and despite all criticisms, Setton (2002: 122-124) recognizes the importance of Seleskovitch's thesis (1975) and calls her a "radical pragmatist before her time". Although he acknowledges her "crusading tone" and the fact that she does not use hypotheses, data and results to make her points, he still thinks that her contribution to interpreting research is invaluable and should be "re-read, updated and integrated" with today's advances in cognitive sciences.

### *3.6.2 Gerver's information-processing model*

Against the background of different studies carried out on the influence of noise, speed of delivery, pauses or source language input rate on the interpreter's output, Gerver (1976) developed an information-processing model. He used research carried out in information processing and focuses on two significant aspects in simultaneous interpreting: memory and attention. His flow chart representation of the process is reproduced here as Figure 15.





**Figure 15:** *Gerver's information processing model (Gerver, 1976: 192)*

Firstly, Gerver concentrates on the memory aspect of interpreting. Following results from ear-voice-span data (EVS), he claims the existence of a 'short-term input buffer memory'. Interpreters also have the ability to translate and listen to further input at the same time, therefore he suggests the existence of a 'short-term working memory'. Moreover, Gerver observes that interpreters have the capacity to monitor and correct their output, therefore there must be a 'short-term output buffer memory'; finally, interpreters need a 'long-term storage of lexicons and grammars of both source and target languages' (Gerver, 1976: 191-194). In his model, Gerver notes that there are some 'permanent structural features', such as the different memory systems; and also some 'control processes' that the interpreter can



select. Gerver's buffer system is consistent with research carried out on memory and attention (see for example Norman, 1968; Kahneman, 1973 as cited in Gerver, 1976: 193). Various storage mechanisms are needed in order to be able to process information. Contrary to claims made by other scholars (see Broadbent, 1958, Welford, 1968 quoted in Gerver 1976: 193) who wrote that attention could not be divided between different tasks, research has shown that this is not the case. Gerver also notes that attention division depends on the task being performed; in other words, under good conditions, an interpreter will be able to divide his attention, but if he has to cope with difficulties, he might concentrate on "decoding/encoding and the monitoring of both input and output might suffer" (Gerver, 1976: 193).

The decoding/encoding processes are only briefly mentioned in the flow chart. Gerver explains that he is attempting to take a psychological rather than a linguistic approach to the study of simultaneous interpreting. What is more interesting for our own study is Gerver's account of the monitoring function. According to him (*ibid.*: 193):

"(...) although the main focus of the interpreter's activity is on the actual translation of a message, information may be acquired simultaneously in a buffer storage while a running comparison can be carried out between output and previous input".

The monitoring function is closely linked with corrections made by interpreters. Gerver (1974b: 165) states: "that simultaneous interpreters do monitor their own output is shown by their self-corrections". He corroborates this with several examples of corrections made either in a laboratory situation or at a conference. He also notes that interpreters do not correct only the "sound" but also the "meaning" of what they say (Gerver, 1976: 188). In other words, interpreters do not only correct slips of the tongue. This is also evident in the following: "(...) these corrections are usually corrections of previous substitutions but may also be improvements or changes of already acceptable translations" (Gerver, 1969: 182-183). On the basis of what we have seen so far, this last statement seems to be a new departure. It certainly goes beyond the interpretive theory's account of the monitoring function, can be linked with Levelt's theory of monitoring and subsequently various categories of repairs (for



more details see 2.5 earlier). More importantly, this account allows for the translation component.

In his flow chart, Gerver has a so-called 'output buffer and control' mechanism as well as a 'Test before O/P (Output)' stage. This means that Gerver foresees the possibility of a pre-articulatory monitoring stage. He explains that an interpreter can either start his output or check whether the translation is satisfactory or not prior to articulation. Unfortunately Gerver's (1976: 199) statement is not backed up by any experimental data but rather by accounts of professional interpreters.

The monitoring (or correcting) depends on the interpreter's "criteria for adequate performance" (Gerver, *ibid.*: 199) and is affected by the interpreting process itself. If the stress level is high and the 'slip' is minor, Gerver observes that the interpreter might not place a great emphasis on correction. This could explain the instances found in our corpus where the interpreter did not repair his/her utterance (see example 31 in chapter 4).

For Gerver, the monitoring function is based on Miller, Galanter and Pribram's (1960) 'TOTE or test-operate-test-exit' theory (Gerver, 1976: 188). According to Miller *et al.* (1960: 26-27): "the building block of the nervous system is the feedback loop". They give the following definition of the so-called 'Test-Operate-Test-Exit unit' (*ibid.*: 31):

"The TOTE represents the basic pattern in which our Plans are cast, the test phase of the TOTE involves the specification of whatever knowledge is necessary for the comparison that is to be made, and the operational phase represents what the organism does about it – and what the organism does may often involve overt, observable actions".

Gerver uses this theory and notes that the interpreter "generates a target-language response, which may pass a first test, and is uttered, but is then tested again" (Gerver, 1976: 188) (also see flow chart, Figure 15). He concludes that "(...) monitoring and possible revision are an integral part of the process of simultaneous interpretation, rather than an additional activity



*after translation*" (Gerver, 1976: 202, italics in original). This statement shows again that Gerver's information processing model and more specifically his account of the monitoring function during simultaneous interpreting is far ahead of other scholars. As we will see in our own account, this point of view seems to reflect our own findings.

### 3.6.3 Moser's information processing model

Moser's (1978) model of simultaneous interpreting is based on work carried out by Massaro (1975a, 1975b). Massaro's model "describes the temporal flow of auditory information, beginning with the acoustic signal (the speaker's message) that arrives at the ear of the listener and ending with some form of mental representation of that message in the mind of the listener" (Moser, 1978: 353). Massaro's model is an attempt at explaining both the understanding as well as the production of language. Moser wishes then to include the added complexity of the interpreter's situation, in other words both the listener and the speaker's role. She seeks to highlight the difficulty encountered by the interpreter in the so-called 'processing' phase. The flow chart representation she proposes is reproduced here as Figure 16.

The interpreting process starts at the top of the chart. The boxes are so-called 'structural components' which "describe the nature of the information stored at a given stage of processing" while the intermediate headings are 'functional components' and describe the "individual operations performed at a particular stage of processing" (*ibid.*: 354). Each diamond represents a decision point. If the answer to one of them is no, the information goes back to an earlier point, if it is yes, it goes on to the next point. This is carried out in a 'rehearsal loop'. It is not our intention here to describe the flow chart in great detail as Moser's article (1978) is extremely comprehensive and explains the model step by step. Nevertheless, it seems interesting to note that, as in Gerver's, Moser's model contains a part on the source-language-input, a part on short-term memory, which is called 'generated abstract memory (GAM)', a part on the target-language output and a part on long-term



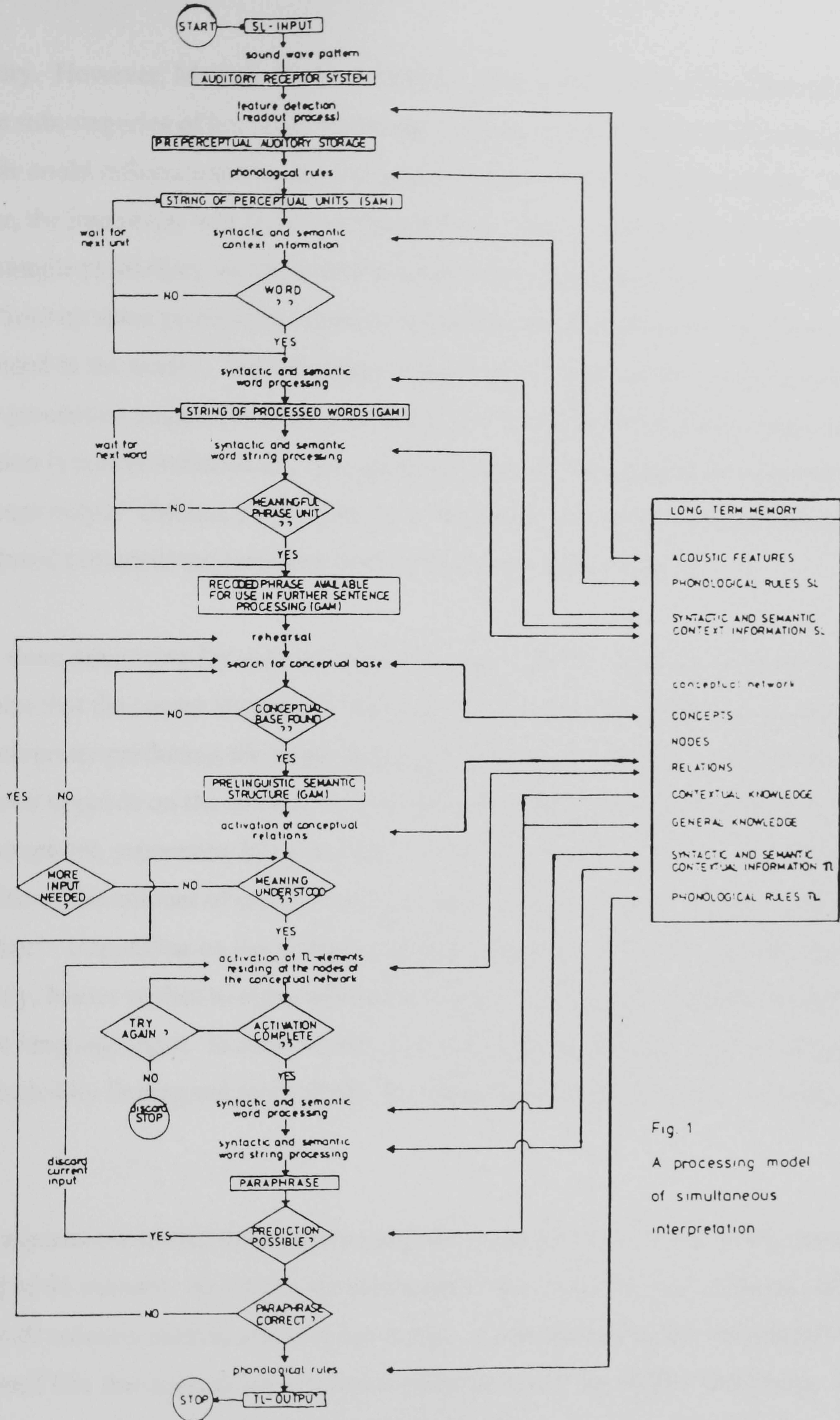


Fig. 1  
A processing model  
of simultaneous  
interpretation

Figure 16: Moser's information processing model (Moser, 1978: 355)



memory. However, Moser's chart seems to be much more detailed than Gerver's. She insists on the subcategories of her chart where she explains that different aspects coming from outside could influence the model and thus the performance of the interpreter. According to Moser, the interpreter will try to use strategies in order to save his/her processing capacities, for example prediction, which is absent in Gerver's model (see Moser-Mercer, 1997: 179). This frees up some processing capacity and enables the interpreter to skip some stages contained in the model. The advantage of her model is that she shows the simultaneity of some processing stages, for example through the feedback and rehearsal loops when the attention is concentrated on the "incoming message and the operations involved in the target language output" (Moser, 1978: 354). It is also important to note that both 'bottom-up' and 'top-down' processes are present at every stage of the whole process.

Even more interesting for our own purposes is the auditory feedback in Moser's model. She explains that the source language is fed to the interpreter through both ears while the voice of the interpreter producing the target language is attenuated. She suggests that the auditory feedback depends on the amount of processing capacities available and says (1978: 361): "for the interpreter, processing his own output as the second incoming message should be a function of the amount of capacity already taken up by the first (primarily attended) message". Depending on the difficulty of the task and therefore the available processing capacity, Moser wishes to show whether the interpreter processes his own output like the source language input. In other words, she wants to show how the GAM capacity could be overloaded by finding out more about "the interpreters' correcting their own output" (*ibid.*: 361).

In an experiment carried out at a live conference, she found only five corrections over a period of 45 minutes. However, the interpreters who corrected their mistakes, did it within the 15-20 seconds interval stated in her theory, which shows that the interpreter's output is processed like the original input and also stored in GAM for further processing. Moser also observed that interpreters did not correct some of their mistakes. Although this experiment could not take into account the semantic difficulty of the remaining message, Moser suggests



that an experimental design could be developed to study this aspect of simultaneous interpreting.

In a later article Moser-Mercer (1997) makes the distinction between professional and trainee interpreters. While the former have a 'macroview' of the process, and therefore are more global in their analysis of the input, the latter have a microview of the input and are more distracted by superficial difficulties and less able to deal with and 'correct' errors. This statement would suggest that the level of awareness about the monitoring function and hence the capacity to repair, not only is not automatic but also depends on the level of experience of the interpreter. Our study does not include any comparison between professionals and novices but this point seems interesting for example, for possible further research.

#### *3.6.4 Gile's processing capacity model*

Having observed that the daily difficulties encountered by professional simultaneous interpreters are not necessarily due to poor interpreting conditions such as noise, high speed of delivery or poor pronunciation, Gile (1997: 197) claims that: "the evidence suggests that there is an intrinsic difficulty in interpreting, which lies in the cognitive tasks involved". In the early 1980s he developed a theory based on the cognitive tasks involved in interpreting and proposed a processing capacity model based on three interpreting 'efforts', which are in competition with each other (see for example, Gile, 1984, 1985, 1990a, 1992, 1995a, 1995b, 1997):

##### **1) Listening and Analysis Effort (L):**

consists of all mental operations between the perception of sounds by the auditory mechanism and the moment when the interpreter either gives or decides not to give a meaning (or several ones) to the segment he heard.

##### **2) Production Effort (P):**



consists of all mental operations between the moment when the interpreter decides to convey a piece of information or an idea and the moment when he overtly produces the segment he planned, in other words his output.

### 3) Short-term memory Effort (M):

corresponds to all operations linked to the storage of discourse segments in memory until their rendering in the target language, to their loss if they disappear from memory or to the decision taken by the interpreter not to render them.

(adapted from Gile, 1995a: 93)

Gile (1995a: 94) also notes the importance of world knowledge and long-term memory for simultaneous interpreters:

"Il existe d'autres opérations mentales qui interviennent dans l'interprétation, notamment la construction progressive d'une base de connaissances sur le sujet et sur la conférence concernée et son stockage en mémoire à long terme"<sup>36</sup>.

The three components or three 'efforts' of Gile's model are non-automatic operations, as they require a so-called 'effort'. The Listening and Analysis Effort seems to be spontaneous and effortless but in fact, because of the very nature of interpreting, i.e. speed of delivery and noise, the interpreter needs to take quick decisions, for example, comparing the material stored in short-term memory with the information contained in long-term memory before taking an 'interpretative decision'. During the Production Effort the interpreter has to deal with different difficulties, i.e. knowledge deficiency, speaker's speed of delivery, anticipation, linguistic interference as well as hesitations. Finally, the Memory Effort in simultaneous interpreting means that the speed of storage and retrieval of information depends on the speaker.

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<sup>36</sup> There are other mental operations which are part of interpreting, for example, the progressive construction of a knowledge base on the subject and on the conference itself, as well as its storage in long-term memory (my translation).



The effort model consists of the three efforts described earlier, i.e. L stands for the 'Listening and Analysis Effort', P for 'the Production Effort', M for 'the Short term memory Effort' plus a Coordination Effort (C), which is required to coordinate the three. It can be presented with the following mathematical equation:

$$SI = L + P + M + C \text{ Gile (1995b: 169)}$$

The interpreter needs to divide his energy between the three efforts and find a balance between them. Depending on the task to be tackled, each effort will have a different processing capacity requirement. Total processing capacity requirements (TR) are again explained with a formula, although Gile (1997: 199) notes that: "it is not necessarily an arithmetic one, as some resources may be shared":

$$TR = LR + MR + PR + CR$$

LR is the processing capacity requirement for the Listening and Analysis Effort.

MR is the processing capacity requirement for the Short-term Memory Effort.

PR is the processing capacity requirement for the Production Effort in the target language.

CR is the processing capacity requirement, which coordinates the three Efforts.

TR is the total of requirements.

Processing Capacity Requirements can change very rapidly for each Effort. Therefore:

if the interpretation is to proceed smoothly, the capacity available for each effort (LA, MA, PA and CA) must be equal to or larger than its requirements for the task at hand

$$LA > LR$$

$$MA > MR$$

$$PA > PR$$

$$CA > CR$$



(Gile, 1997: 199)

Interpreters can circumvent difficulties by transferring their resources from one effort to the other. On the other hand, if the energy required for each effort is not divided well or if there is a saturation of the total available processing capacity, failures can occur. Gile gives different situations in which the imbalance can lead to a difficulty:

- a) fast and informationally dense speeches (i.e. in terms of the speech's content or a speech which is read out), where the Listening and Analysis Effort will be overloaded and will take more time;
- b) composite proper nouns, lists of words, which affect the Listening Effort and possibly overload the Memory Effort;
- c) foreign accents which are not familiar to the interpreter can increase the processing capacity requirements for understanding;
- d) names;
- e) numbers;
- f) technical terms

(adapted from Gile, 1985: 46; 1990a: 18-19).

The effort model postulates that if the interpreter does not possess the required amount of processing capacity, the process will become too difficult and might break down, explaining how errors may occur.

"The Effort Model also provides an explanation for the fact that errors often occur when there is no apparent reason (in easy, slow, clear non technical source speech segments): besides the occasional lapse of attention which can lead to insufficient PC being available for a particular task (...) such errors can be the result of 'carry-overs'" (Gile, 1990a: 19).



According to Gile (1990a: 17-20) the model also shows that some language pairs might be easier to interpret than others and that the ever-fought subject of "into A vs. into B language"<sup>37</sup> interpreting takes on a new dimension. Gile (*ibid.*: 17) admits that his model is a "conceptual" one and still needs to be tested experimentally.

In a later article, Gile (1999) applies the effort model to a corpus of 10 professional interpreters who were asked to interpret a short speech in simultaneous and repeat the experiment with the same text afterwards. Gile found some 17 flagrant errors and omissions in the first version. Some of these were corrected in the second interpretation but the interesting point in this study is that some interpreters made new errors/omissions in the second version. This allows Gile (1999: 159) to confirm the so-called 'tightrope hypothesis', inherent in the effort model, in other words the idea that

"most of the time, total capacity consumption is close to the interpreter's total available capacity, so that any increase in processing capacity requirements and any instance of mismanagement of cognitive resources by the interpreter can bring about overload or local attentional deficit (in one of the Efforts) and consequent deterioration of the interpreter's output".

Although the effort model is a useful tool to account for errors and omissions found in interpreters' outputs, it seems important to note that in the model all efforts end with the production of an output. Therefore, this model excludes by definition any post-production monitoring. This seems to suggest that Gile did not appreciate what Gerver proposed in his information processing account of the simultaneous interpreting process. The Effort model does not propose a separate 'effort de contrôle' or 'monitoring effort'. Gile (1995b: 162) claims: "there may be other significant operations associated with simultaneous interpretation that are not mentioned here, but they are probably marginal with respect to processing capacity requirements (...)". Having said that, Gile does mention self-monitoring in his article on the 'tightrope hypothesis' (1999) and seems to include it in the Production Effort. In later publications, Gile (2000) questions the distinction made between the three efforts and

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<sup>37</sup> A represents the native language while B represents the active foreign language.



explains that they share some common features (for example 'long-term memory'), that they might not be in 'competition' with each other but rather 'cooperate' and that the processing capacity requirements might vary depending on the circumstances. All of these issues need to be tested with further empirical data and are of interest to our study of repairs in interpreting. However, the fact remains that Gile does not foresee the monitoring function as a separate part of the model and therefore seems to downplay an important concomitant effort. Consequently, on the basis of our own study, it seems appropriate to posit a fourth effort: monitoring, which we will explore and analyse in greater detail below.

### *3.6.5 Setton's cognitive-pragmatic model*

Taking an interdisciplinary approach, Setton (1999) combines various elements from disciplines such as psycholinguistics, linguistics and psychology and proposes a pragmatics perspective of the simultaneous interpreting process. He proposes the flow chart reproduced in Figure 17.

In this model, Setton uses findings from different authors and disciplines. Some of the speech comprehension is adapted from Clark and Clark (1977), inputs to comprehension from Garman (1990), word-recognition from Tyler and Marslen-Wilson (1982), parsing in the Assembler from Altman and Steedman (1988), further disambiguation of propositions with access to context and frame knowledge from Sperber and Wilson (1986, 1995) and Fillmore (1985), working memory and mental model from Johnson-Laird (1983) and Garnham (1987) and finally the speech production part is adapted from Levelt (1989). This shows the complexity and exhaustive nature of Setton's account of the simultaneous interpreting process.

Setton (1999: 67) summarizes the model with the following components:

"INPUTS:

- Speaker input



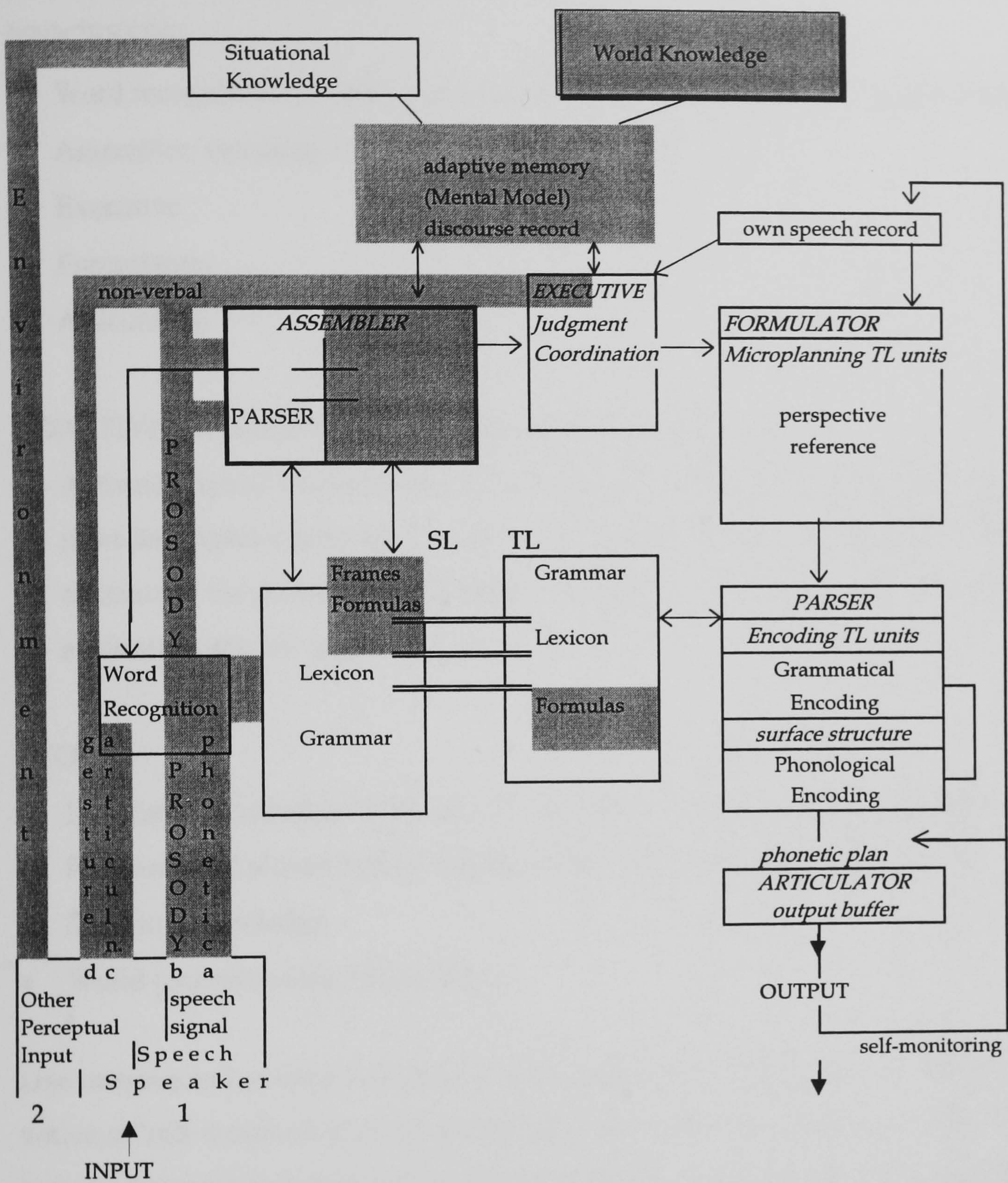


Figure 17: Setton's model (Setton, 1999: 65)



- Other audiovisual input
- Interpreter's own speech

#### PROCESSES:

- Word recognition (including acoustic discrimination of speech, feature detection)
- Assembler, including Parser (captures fragments)
- Executive
- Formulation
- Articulation

#### ADAPTIVE (WORKING) MEMORY (short to medium-term):

- Activated 'space' encompassing a task-oriented mental model, the Executive, and very short-term echoic memory (not shown), which briefly (3-4s) represents fragments of the contents of the Assembler as auditory traces with whatever elaboration they have achieved within its span.

#### STORES:

- Linguistic knowledge for SL and TL: rules of grammar, lexicon (linguistic information for words and phrases) and formulas, with cross-linguistic connections.
- Situation knowledge
- World (encyclopaedic) knowledge "

One component included in Figure 17 but not present in the summary outlined above is the notion of 'self-monitoring' on the production side. Like Levelt, Setton (1999: 96) notes that both the "internal and overt speech are monitored by the Speaker's speech comprehension system". Setton agrees that monitoring is controlled, in other words it can either lead to an improved output or be neglected. Furthermore, monitoring requires attentional resources. Setton also quotes Gerver's study to emphasize the evidence of pre- and post-articulation self-monitoring and its logical consequence, the occurrence of repairs.



In his model, Setton places the 'self-monitoring' function outside the different components of speech production and hence he differs from Levelt's account (see Figure 2). In Setton's model, monitoring occurs after the output but the interpreter has access to his/her own output before the Formulation stage (see 'own speech record' in Figure 17 above). Although Setton's model seems to be a very exhaustive interdisciplinary approach to explain the simultaneous interpreting process, Setton himself points to the shortcomings of his approach. He lists several questions which, according to him, do not find a precise answer in the model; for example the issue of interaction between sub-systems or the competition for resources between them (for more details, see Setton, 1999: 67).

In his pragmatics approach, Setton (*ibid.*: 8) also uses relevance theory and finds it an interesting tool in order to "reconstruct the contexts used in understanding" as well as look at "communicators motivated by a desire to expand their cognitive environment or influence others". In the case of simultaneous interpreting, Setton looks at what he calls "a secondary communication" (*ibid.*: 9) where the Speaker's ostension is not directed at the translator. Setton states that interpreters should be able to render their output to the audience at the same level of relevance, in other words, it should not require more effort on the part of the receiver to derive the same contextual effects than if they were listening to the original input directly (*ibid.*: 230). In the corpus Setton studied, he found evidence of what he calls 'world knowledge' used by interpreters in order to expand or explain a reference. For example, the interpreters he studied used additional information known to them but not contained in the input (*ibid.*: 176). In other words, simultaneous interpreters introduce cohesive referential links in order to reduce the audience's effort and increase the cognitive effects (*ibid.*: 179). This idea will be explored in sections 4.4 and 4.5 of our own analysis. Setton also posits a simultaneous interpreting "Pragmatic Compensation Principle" (*ibid.*: 274-275) which enables interpreters to "direct hearers to relevance", in other words interpreters can "reconstruct the pragmatic and ostensive dimension of the discourse in production, using local devices in the target language appropriate to the linear dependency of the simultaneous interpreting process". Depending on the language, interpreters use for example modal adverbs in Chinese and German in order to express connectivity and attitudes while in English, it will be prosody and parentheticals.



According to Setton, Gile's effort model needs to be refined in the light of relevance theory. The listening and production effort should only be important in the case of "difficult syntactic computation, phonological replay or conceptual/lexical retrieval" (*ibid.*: 279). Setton's analysis suggests that the central element of the cognitive load in simultaneous interpreting should not be seen as a 'memory effort', in other words a way of retaining language forms for processing, but rather an 'inferential effort' which is used "to retrieve the contexts which yield relevant meaning". Relevance theory explains how a motivated interpreter can provide the raw material for a listener who will seek contextual resources necessary to derive relevant effects. If the interpreter's production is indeterminate, the listener will "continue to seek more context to the extent of his own interests" (Setton, 1999: 280). According to Setton, relevance theory revises the traditional assumption in pragmatics about the too strong Gricean 'cooperative principle'. It allows to account for speakers who may be "more or less cooperative, interpreters who may be more or less competent and listeners who may be more or less aware" (*ibid.*: 280).

### 3.6.6 *A model of simultaneous interpreting for repair analysis*

Based on the reviews of speech processing and simultaneous interpreting above, we now present a model of repair in the simultaneous interpreting process. It is the model which will serve as the theoretical underpinning of the empirical study which follows (see chapter 4). This is not an attempt at presenting a model which can account for the whole interpreting process. As Moser (1978: 353) puts it: "(...) no model ever solves all the problems it defines and no two models leave all the same problems unsolved". This model is rather an attempt at taking into account the core subject of this study, namely the occurrence of repairs in simultaneous interpreting. Presenting a model also means that we are trying to 'systemize' (see Beaugrande and Dressler, 1981: 32) the study, in other words, we hypothesize that the treatment of the data is not random but can be controlled by 'orderly principles'. This model is a combination of various sources discussed earlier in this study. It contains elements of pragmatics: inferencing refers to works by Johnson-Laird (1983); Sperber and Wilson (1986); Yule (1996); top-down and bottom-up processing comes from Marslen-Wilson and



Welsh (1978); the speech production model as well as the monitoring function are adapted from Levelt (1989) and the cut-off mechanism from Berg (1986a).

As we have seen so far in both chapter 2 and this chapter, studies in psycholinguistics and neurolinguistics provided us with a better understanding of the speech production process. The inherent monitoring function needs to be applied to the interpreting situation and thus allow for a fast control mechanism. Arising from the study of the literature, we decided to opt for the editor theory of monitoring and more specifically Levelt's (1989: 470) perceptual theory which posits two monitoring loops. The categories of repairs developed by Levelt will also be adapted to account for various types of repairs in simultaneous interpreting. The pragmatics approach described earlier and more specifically Sperber and Wilson's relevance theory (1986) as well as Gutt's (1991) notion of resemblance are also useful for allowing us to focus on the interpreting process in context. As described in this chapter, scholars in interpreting studies have carried out extensive research on various aspects of simultaneous interpreting to date. Unless they took an interdisciplinary approach to their work, however, (see information processing or cognitive-pragmatic approaches), most of them did not give a lot of attention to the notion of repairs in interpreting<sup>38</sup>. The model we are proposing below, therefore, as we have seen, is an attempt to account for instances of repairs occurring in interpreting.

In this model, we have included not only speech production but also speech reception in order to account for the fact that the simultaneous interpreter is both a speaker and a listener. The Input corresponds to the original speaker's production, in other words the equivalent of the source text, and the Output is the interpreter's utterance. Both input and output will be used in this study to refer to the source and target text. Although the monitor is placed externally in this model, it has access to the final result of the process which corresponds to the so-called 'perceptual loop theory' of monitoring. Moreover, the monitor is a 'flow-through' one, which means that the input received by the interpreter is not stopped but goes through. This allows for a speedier monitoring of speech, which is a significant asset during

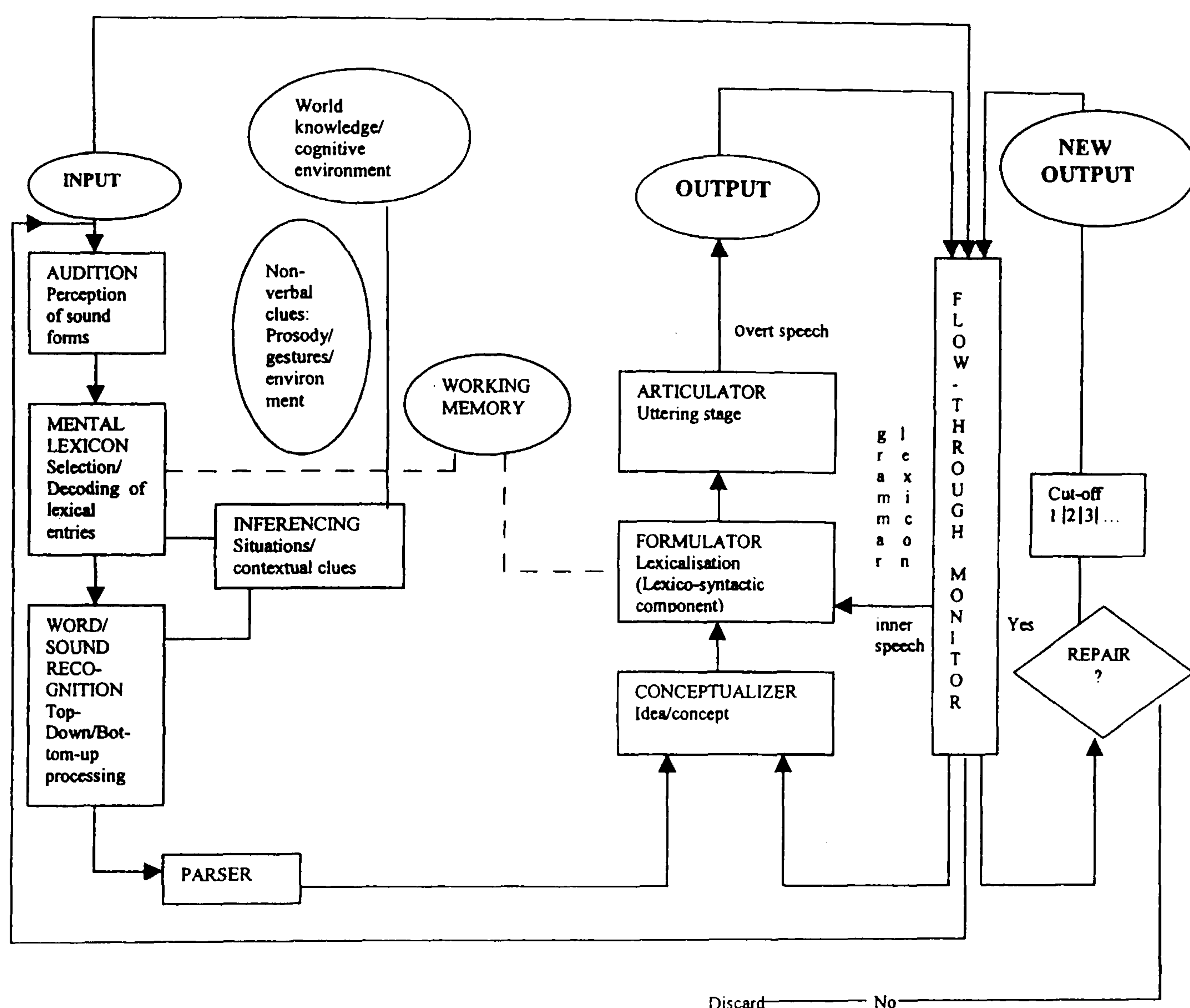
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<sup>38</sup> For some exceptions, see for example Pöchhacker, 1995; Tissi, 2000 or Mead, 2002.



simultaneous interpreting. The perceptual loop theory adopted by Levelt is here adapted to the study of repairs in interpreting.

The monitoring function in this model has access to the output as well as the input. This is an important departure, which differs from research carried out in speech production. In the case of simultaneous interpreting, the interpreter monitors not only his/her output but also the



**Figure 18:** *A model of simultaneous interpreting for repair analysis*

original speaker's input. This gives rise to 'Input-generated' as well as 'Output-generated' repairs (for further details, see chapter 4). The monitor also has access to overt speech as well as inner speech. The former can lead to post-articulatory, the latter to pre-articulatory repairs. As stated earlier, while pre-articulatory monitoring takes place, the occurrence of



pre-articulatory repairs is much more difficult to find tangible evidence for. Therefore, we have opted for a further distinction called 'Mid-articulatory repairs' (for further details, see chapter 2.5) in order to cover just those repairs of which there is some audible trace in the output.

This model also allows for 'simple repairs', which go through the flow-through monitor once, as well as 'multiple repairs', which go through the loop more than once. To our knowledge, the occurrence of multiple repairs in interpreting has not been mentioned before in the literature yet it is well attested in our corpus as will be seen below in chapter 4. In the model, the repair mechanism is in a diamond, which corresponds to a question (already mentioned in Moser, 1978, see section 3.6.3). If the interpreter's decision is 'yes', the repair takes place, if 'no', the action is 'discarded'. Our study does not include occurrences of 'no-repairs' which might be deliberate or not. However, it is interesting to note that some examples exist in the corpus (see corpus available on CD-ROM for further details). This model will be used in the analysis to account for the various types of repairs found in the corpus and will help us shed light on the interpreter's deployment of processing resources during simultaneous interpreting. In the following chapter, we will look at the occurrence of repairs in a corpus of simultaneous interpreting data.



### 4.1 Corpus

The corpus consists of eight professional interpreters (five male and three female)<sup>39</sup> whose performance was recorded at four different international conferences on topics of general interest. All interpreters chosen for this study are professionals and have been working for an average of between 10 and 15 years on the freelance market. The first two conferences were recorded in Ireland, the first one took place in Dublin Castle in 1998 and was a European Regional Meeting of the "International Social Security Association". The topic of the conference was the "Evaluation of Social Security Reforms" (hereafter called 'Social Security'). Two teams of two interpreters worked in different language combinations: one for French-English/English-French, the other one for German-English/English-German. Both language combinations were used for the purpose of this study. The recorded corpus for this conference contains different types of discourse in terms of genre: an opening speech (SS<sup>40</sup>, SS U and SS M); introductory remarks as well as discussions (SS M) and a formal address (SS U). It also contains different types of delivery: the speed rate is, on average, approximately 140 words per minute for the introductory remarks, 150 words per minute for the opening speech and 120 words per minute for the discussions. The interpreters had access to a manuscript for the opening speech and the formal address.

The second conference took place in Galway (Ireland) in 1998 and was entitled "Global Change through Information Technology" (hereafter called 'Telework'). One team of two interpreters worked in a French-English/English-French booth. The recorded corpus (TW) contains the presentation of one speaker who is making a Powerpoint presentation which was made available to the interpreters. The speed rate of the presentation is, on average, approximately 170 to 180 words per minute.

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<sup>39</sup> It was decided not to use a generic form for all interpreters, in other words either he (like in most studies) or she (for eg. see Setton, 1999) but instead to keep either the masculine or the feminine pronoun depending on the interpreter.

<sup>40</sup> See abbreviation list in preface.



The third conference took place in Switzerland and dealt with trade unions and telecommunication (hereafter called 'Telecommunications'). Again, the recorded corpus contains different types of discourse: introductory remarks as well as a presentation. The speed rate is, on average, approximately 60 words per minute for the introductory remarks and 120 words per minute for the presentation. It was not possible to ascertain whether the interpreter had any written material in the booth.

Finally, the last conference took place in Vienna (Austria) in 1991 and was entitled "ICSB 36<sup>th</sup> Annual World Conference" and dealt with 'Small Business and Partnership' (hereafter called 'ICSB'). Three teams of interpreters worked in different language combinations: a team of three for English-German/German-English for the duration of the conference, two for English-French/French-English for the morning of the second day and two for English-Italian/Italian-English for the afternoon of the second day. For the purpose of this study, we only used the recordings of the English/German, German/English booth. The corpus contains the following types of discourse: a welcome speech (MU) and presentations (SL and HU). Various material was made available to the interpreters (for further details, see Pöchhacker, 1994: 149-151). The speed rate is, on average, approximately 120 words per minute for HU and MU and 150 words per minute for SL.

The corpus was gathered in two different stages. From the beginning, it was decided to choose an authentic corpus as opposed to setting up an experiment in a laboratory. The access to data was facilitated by our personal professional experience on the Irish interpreting scene and the fact that we were interpreting at the first two conferences mentioned above. At the corpus gathering stage, we did not know exactly what the focus of the study would be. Therefore, we could have used our own interpreting, but for reasons of scientific validity, we decided not to. After having gathered the recordings of four colleagues on the freelance market in Ireland, we decided to extend the corpus. Due to a certain paucity of adequate subjects, i.e. professional interpreters with the required language combination and experience (see Shlesinger, 1989a quoted in Gile, 1995a), we decided to seek help among colleagues outside of Ireland. The important factor was to have more variety, in other words different interpreters and not merely have to rely on longer recordings of the same interpreters.



Colleagues in the field of interpreting research were extremely helpful and provided recordings of the last two conferences, which resulted in four extra interpreters. We formally requested the permission to record not only the interpreters but also the speakers who agreed to being 'immortalized on tapes' for the purpose of an academic research project.

The different languages used at the recorded conferences were English, French and German. At the conference on 'Social Security', the English original was interpreted by one interpreter into French and by two others into German. The conference on 'Telework' as well as the conference on 'Telecommunications' were both interpreted from English into French while at the 'ICSB' conference, two interpreters worked from English into German and one worked from German into English (his B language). All recordings were limited to 10 minutes in duration.

## 4.2 Methodology

Researchers have studied simultaneous interpreting data in different ways. From the beginning of this research project, it was decided to carry out empirical research by collecting and processing authentic data and focusing on an 'observational approach', in other words studying interpreting as it occurs *in situ* rather than an 'experimental approach' in which interpreters are recorded for the specific purpose of a study (see Gile, 1998: 70). In all, a sample of 10 minutes for each interpreter was randomly chosen at the beginning of each tape out of the entire corpus made available to us, making a total of 80 minutes of recordings. This arbitrary means of selection was used in order to ensure extracts of approximately equal length. Although it seems unrealistic to claim that a sample of eight professional interpreters working at four conferences in three different languages is representative of all interpreting, it is nevertheless a sizeable corpus in comparison with other research studies (see for example Lederer, 1981 who selected a 30-35 minute corpus of German to French simultaneous interpreting data from an hour of bilingual discussion; also see Setton, 1999 who used several corpora with a sample of 14 minutes of discourse or a total of 30 minutes of target language versions). As Setton observes (1999: 104) researchers have used longer or shorter corpora to shed light on various aspects of the simultaneous interpreting process (see



for example Barik, 1973, 1975 who analysed "temporal and error data in two 3-5 minute texts out of a one-hour corpus of six versions of eight simultaneous interpreting discourses"; or Goldman-Eisler, 1972a who focused on "the segmentation of input in 28 versions of 9 texts of 3-6 minutes each"). Some researchers have used extensive corpora (see for example Pöchhacker, 1994 who analysed transcriptions of a three-day conference<sup>41</sup> or a Japanese study of 189 subjects by Yoshitomi and Arai, 1991 cited in Gile, 1998: 80). Our analysis suggests, however, that the corpus compiled for the present study is adequate in size for the intended purpose, namely, investigating the following questions:

- a) Is Levelt's claim justified that repair is more than a matter of error correction?
- b) if error repair is not the main motivation, what are the interpreter's priorities and the main drivers of repairs?

Our study focuses on three languages: English, French and German. It seems important to note that the use of different languages (for example non-Indo-European ones) might lead to a prevalence of different sources of trouble and thus different kinds of repairs. However, a lot of our findings hold for most of the interpreters in our corpus and therefore, the evidence, although limited, is representative of these randomly chosen recordings of a group of interpreters. Even if the corpus consists of four different events and therefore four completely different situations, the analysis of the various samples helps to make some general claims on the occurrence of repairs in simultaneous interpreting.

From the outset, it was decided to look at interpreters' outputs in simultaneity with the original input. In this way an attempt was made to try to keep the element inherent in simultaneous interpreting which makes it different from any other type of translation or interpreting. However, the corpus was recorded in various ways. The conference on 'Social Security' as well as the conference on 'Telework' were both recorded on dual track tapes and different channels, which involved the use of a tape recorder which separates both tracks and thus allowed us to listen either to the input, the output or both at the same time. Therefore, it was possible to make the distinction between the original and the interpreter. This was not the case with the rest of the corpus. Although the conference on 'Telecommunications' was

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<sup>41</sup> See ICSB corpus mentioned above.



recorded on dual track, it was on the same channel and therefore it proved impossible to split the input from the output. As a consequence, some parts of this recording were inaudible. Another difficulty was encountered with the 'ICSB' conference, where the interpreters and the original speakers had been recorded on separate tapes. With the help of a technician, it was possible to re-record the tapes and obtain new dual-track recordings of this conference. However, it is important to note that it proved difficult to establish the synchronicity for two of the interpreters (see SL and MU). All of this adds to the difficulty of data gathering most researchers know (see Lederer, 1981: 26 who decided to re-record her data by superimposing the beat of a metronome with a ringing bell over the whole corpus in order to be able to transcribe the simultaneity of the recordings).

Following the data gathering stage, the researcher's next titanic task is the transcription of data. Transcriptions allow putting on paper speech which, by its very nature, is fleeting. At the time of the transcriptions, we were not aware of any speech recognition software, which could transcribe both input and output simultaneously. Since then, we heard of the HIAT conventions used in combination with sync-WRITER-software (for further details, see Ehlich, 1993; Meyer, 1998). This particular software however was not used in the transcription of the data and it is possible that accuracy may have slightly suffered. More specifically, in the case of the conference on telecommunication, some of the input and output were inaudible not only because of the same channel recording but also because of the strong accent of the original speaker. Transcription conventions were used as follows:

- (...) something was uttered beforehand
- [ simultaneity between input and output
- . terminating intonation (falling tone)
- ::: long or lengthened sound (as in e:::)
- ??? inaudible sound/utterance
- / questioning intonation (rising tone)

(adopted from Mason, 1999)



A complete transcription of the corpus is available in CD-ROM format. In the transcription, the original input is on the first line and the interpreter's output in red every second line. The different repairs we analyzed in this corpus are underlined and were given a reference number. Instances of hesitations (marked as 'hes') are also marked in the corpus although we did not include them in the analysis (apart from 4.5.4.4).

For reasons of clarity for the reader, it was decided to present the various examples in the analysis chapter as follows: the first line is the original speaker's input, the second line in bold typeface is the interpreter's output and the third line in italics is a gloss of the interpreter's translation. The gloss is a word-for-word rendition of the output and therefore does not respect the grammaticality of the language. The established simultaneity is marked by the following bracket: '['. The reparandum as well as the reparatum are underlined for the purpose of clarity. Although the whole thesis is presented with a 1.5 space between lines, it was deliberately decided to leave a single space between either the output or the input and its gloss. Moreover all examples of repairs are numbered sequentially followed by a finding reference, which represents the interpreter and can be found in the transcriptions available on CD-ROM. While all examples were analysed they could not all be presented in the thesis. Therefore, it was decided to present a large number of analysed repairs and add some examples without any analysis in order to substantiate the analysed examples.

As we already saw earlier, Levelt's categories of repairs in spontaneous speech were used and adapted to the purpose of our own study of repairs in simultaneous interpreting (see Figure 14 in section 2.5). Levelt's focus on the reason why a speaker repairs his/her speech seems to be an adequate starting point to find out what the occurrence of repairs in simultaneous interpreting and the deployment of processing resources can tell us about the whole process in real time. In the course of the analysis, we discovered that the categories used were not all applicable to the examples of repairs or more precisely that some of the examples could fit in more than one category. Therefore, the quantitative analysis of the corpus will be rather limited and the main thrust of the study will focus on a qualitative approach.

### **4.3 Quantitative analysis**



In this section, we will present a short quantitative analysis of the data. First, we will show in a tabular format the total number of input-generated vs. output-generated repairs as well as per interpreter. Secondly, we will present the total number of repairs in the four sub-categories: post-articulatory Appropriateness (A), post-articulatory Error (E), post-articulatory Different (D) and Mid-Articulatory (Mid-Art.), as well as per interpreter. Finally, we will make the distinction between the total number of signalled, juxtaposed and disguised repairs as well as per interpreter. All of these data will be analyzed following the presentation of the tables.

### 4.3.1 *Input-generated vs. output-generated repairs*

As already stated in this study, interpreters can monitor both the original speaker's input as well as their own output. This gives rise respectively to input-generated and output-generated repairs, in other words the distinction between input and output-generated repairs depends on where the trigger for the repair is located (see 2.5). We now present a table to show how many repairs in the study are input-generated (hereafter 'input repairs') and how many are output-generated (hereafter 'output repairs'). The figures presented in brackets are ambivalent examples (for further details, see sections 4.4.5 and 4.5.5) and are only displayed for information purposes but are not counted in the various percentages presented below.

Interpreter	Input-generated (total)	Output-generated (total)	Total
TW	13 (+1)	30 (+2)	43 (+3)
SS	5	9 (+1)	14 (+1)
SS M	9	26 (+1)	35 (+1)
SS U	9 (+1)	11	20 (+1)
TC	5	12	17
SL	4	16	20
HU	5	12	17



<b>MU</b>	2	3	5
<b>TOTAL</b>	52 (+2)	119 (+4)	171 (+6)

**Table 19:** *Input-generated vs. output-generated repairs*

Table 19 shows a significant difference between the total number of input vs. output repairs in our corpus. While there are 52 (+2) input examples, there are 119 (+4) output ones. This difference shows the propensity to repair one's own output. It seems to suggest that interpreters show a general tendency to repair their own output more often than their translation of the original speaker's input. The distribution of repairs per interpreter also shows the same result, in other words each interpreter taken separately made fewer input than output-generated repairs, with the exception of MU (2 and 3). In the case of four interpreters, the total of input repairs was multiplied by two in the output category (see TW, SS, TC and HU), while one interpreter's result was multiplied by three (see SS M) and one was even multiplied by 4 (see SL); the last two interpreters either show a slight increase between input and output (see SS U, 9 (+1)-11) or nearly the same number of repairs in both categories (see MU 2-3). The preponderance of output repairs would suggest either more monitoring of output than of input, or that interpreters aim to translate first of all and then attend to improvements, or in other words, they look for a better match or better target language expression.

We can also look at the different totals of both types of repairs between interpreters. Two interpreters seem to stand out with 43 (+3) (TW) and 35 (+1) (SS M) instances while the majority of interpreters have around 20: SS (14 +1), SS U (20+1), TC (17), SL (20) and HU (17). The last interpreter (MU) is at the other end of the spectrum with only five instances in total. This shows a substantial difference between TW/ SS M and MU. While it seems rather difficult to find a reason for this result, we can hypothesize that there is a variation in the interpreters' deployment of processing resources and the use of their monitoring function. All of these results seem rather broad and can be refined by looking at the different sub-categories used in the analysis of the corpus.



4.3.2 Four sub-categories

In this section, we will focus on the total number of repairs per sub-category as well as per interpreter. As stated earlier, we used Levelt's categories of repairs and adapted them to the study of repairs in simultaneous interpreting. The first distinction is between post-articulatory and pre-articulatory repairs. As already explained, the former can be further subdivided into A (for Appropriateness), E (for Errors) and D (for Different word order or alternative syntax) while the latter has been renamed 'mid-articulatory' because there is evidence (see chapters 4.4.4 and 4.5.4) that part of the utterance is articulated before being repaired. In Table 20, we present the number of input-generated repairs per sub-category.

	Post-articulatory A	Post-articulatory E	Post-articulatory D	Mid-articulatory	Total
TW	1	2	10	(+1)	13 (+1)
SS	1	2	2	0	5
SS M	3	1	5	0	9
SS U	3	1	3	2 (+1)	9 (+1)
TC	1	1	3	0	5
SL	1	3	0	0	4
HU	3	1	1	0	5
MU	0	2	0	0	2
Total	13	13	24	2 (+2)	52 (+2)

Table 20: *Input-generated repairs per sub-category*

In Table 21, we present the number of output-generated repairs per sub-category:

	Post-articulatory	Post-articulatory	Post-articulatory	Mid-articulatory	Total
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	<b>A</b>	<b>E</b>	<b>D</b>		
<b>TW</b>	6	8	2	14 (+2)	30 (+2)
<b>SS</b>	2	3	2	2 (+1)	9 (+1)
<b>SS M</b>	1	9 (+1)	7	9	26 (+1)
<b>SS U</b>	2	3	1	5	11
<b>TC</b>	8	3	1	0	12
<b>SL</b>	9	5	0	2	16
<b>HU</b>	5	5	0	2	12
<b>MU</b>	0	2	1	0	3
<b>Total</b>	33	38 (+1)	14	34 (+3)	119 (+4)

**Table 21:** *Output-generated repairs per sub-category*

First of all, both tables show that there is a substantial difference between the total number of post-articulatory repairs compared with the total number of mid-articulatory repairs, respectively 135 (+1) and 36 (+5). When we look at the categories in detail, we can see that there are more E-repairs (total of 51 (+1), i.e. 29.8%) than A (total of 46, i.e. 26.9%), D (total of 38, i.e. 22.2%) or Mid-Art. (total of 36 (+5), i.e. 21%). This shows a propensity to repair errors and could be linked to studies carried out in speech production and the general idea that a repair is produced in order to correct an error. However, the interesting point here is not that there are more E than A, D or Mid-Articulatory repairs but that the total number of E-repairs (29.8%) is much lower than the total number of A, D and Mid-Articulatory repairs taken together (70.1%). Our results are rather different from what other scholars found so far. In his own corpus, Levelt (1983: 51-55) found 41 per cent of E repairs, 30 per cent of A repairs, 1 per cent of D repairs and 25 per cent of covert repairs. In another study, Brédart (1991: 131) used the same classification and found more E repairs (48%), fewer A repairs (7%), the same amount of D repairs and more covert repairs (42%) (Levelt, 1983 and Brédard, 1991: 131; see also Van Hest *et al.* 1997: 89-90). In order to be able to compare our own data with the results found by Levelt and Brédart in their studies of spontaneous speech production, we decided to include the instances of output-generated repairs and leave out the



input-generated ones. Table 22 illustrates the differences between the results found by Levelt, Brédart and our own results:

Type of repair	Levelt's results	Brédart's results	Our own results (Output-generated repairs)
Postarticulatory A	30%	7%	27.7%
Postarticulatory E	41%	48%	31.9%
Postarticulatory D	1%	1%	11.7%
Covert/ Mid-Articulatory	25%	42%	28.6%

**Table 22:** *Overview of different research results: percentages per repair category*

As we can see in Table 22 above, we found slightly fewer A repairs than Levelt but much more than Brédart. Our corpus contains fewer E repairs than Levelt's and Brédart's but the main difference is in the number of D repairs, where they both found only 1 per cent of examples whereas we found 11.7 per cent. Moreover, Brédart found 42 per cent of pre-articulatory repairs and we only found 28.6 per cent of instances in our Mid-Articulatory category.

This shows yet again that our instances of repairs are not just about the correction of errors. When we look at the variation in the distribution of the sub-categories in the input-generated repairs, we can see the following results: A (25%), E (25%), D (46.1%) and Mid-Art. (3.8%). While the number of A and E input repairs is the same, there is a major difference with the number of D and Mid-Articulatory repairs. This shows that when it comes to producing an input repair, interpreters are willing to spend more processing resources by changing the word order and choosing an alternative syntax. When we take a look at the distribution of the output-generated repairs, we see the following: A (27.7%), E (31.9%), D (11.7%) and Mid-Articulatory (28.6%). The major difference between input and output-generated repairs is in the D and Mid-Articulatory categories. While there are far fewer D repairs in the output



category, the number of Mid-Articulatory repairs is much higher. This shows that interpreters have a tendency to repair their outputs in mid-flow rather than when the repair is triggered by the original speaker's input.

If we now focus on the sub-categories per interpreter, we can see that in the input-generated repairs, the A category does not show major differences between interpreters: SS M (3), SS U (3), HU (3), TW (1), SS (1), TC (1), SL (1), MU (0). The E category is rather similar: SL (3), MU (2), TW (2), SS (2), SS M (1), SS U (1), TC (1), HU (1). On the other hand, the D category shows a discrepancy between subjects: one interpreter (TW) stands out with 10 instances while the rest are similar: SS M (5), SS U (3), TC (3), SS (2), HU (1), SL (0) and MU (0). In the Mid-Articulatory category, one interpreter stands out with the only two repairs (+1) of the whole category while the rest did not produce any repair: SS U (2 +1), TW (0 +1), SS (0), SS M (0), TC (0), SL (0), HU (0), MU (0). What is interesting in these results is the distribution of repairs per interpreter. One interpreter (TW) shows higher scores of input-generated D-repairs than the rest of the subjects (10). We can observe that this particular interpreter tends to start with one construction and halfway through chooses a different word order. This tells us that not all interpreters behave in the same way. This one exhibits a tendency to abandon one structure and start another. The rest of the subjects score between 0 and 5 (see Table 20 above).

As far as output-generated repairs are concerned, the results show the following: in the A category, we can see two main groups, one from zero to two repairs (MU, SS M, SS U, SS) and the other group from five to nine (HU, TW, TC, SL). The E category ranges from two to nine repairs and is divided into two groups, one from two to five: MU (2), SS U (3), TC (3), SS (3), SL (5), HU (5) and a second group from eight to nine: TW (8) and SS M (9). In the D category, there is a difference between one interpreter with seven repairs (SS M) and the rest of the subjects who range from zero to two. Finally, the Mid-Articulatory category is also divided in two groups, the first group varies from zero to two: TC (0), MU (0), SS (2), SL (2), HU (2) while the second group of two subjects respectively shows five and nine repairs (SS U and SS M). Generally, we can say that the results are rather low and therefore



not significant. However, one interpreter (TW) stands out with a total of 14 Mid-Articulatory repairs. This shows a distinct interpreter behaviour.

Looking at the differences in the output-repairs between interpreters, we can notice that two interpreters stand out in two categories: TW in E and Mid-Articulatory with respectively eight and 14 repairs and SS M in E and D with nine and seven. A further two subjects show a higher score in the A category than the others: TC with eight and SL with nine. By looking at the total of output-generated repairs per interpreter, we can see that there are three groups, first two subjects with fewer than 10 repairs: MU (3) and SS (9 +1), then a group from 11 to 16: SS U (11), TC (12), HU (12), SL (16) and finally a last group from 26 (+1) to 30 instances: SS M (26 +1) and TW (30). These results show us a major difference between, for example, subject MU with a total of three repairs and subject TW with a total of 30 (+2) but it also shows that half of the interpreters have similar scores (between 11 and 16). It tells us that, despite the further deployment of processing capacities, interpreters are willing to repair their output, even if they do so for different reasons.

#### *4.3.3 Different types of repairs*

Repairs can be further sub-divided into three different types. First, they can be signalled, in other words the interpreter tells the listener that s/he is making a repair for example by apologizing (eg. TW 13: 'mette en pied, sur en, en place, pardon en essayant de...'). Secondly, the repair can be juxtaposed when the interpreter utters the first solution and adds on the repair immediately afterwards (eg. HU 7: (...) 'is directed is addressed to all men of good will'). Thirdly, the repair can be disguised when the interpreter links the reparandum and the reparatum with 'and', thus not signalling the repair to the listener (eg. TC 4: 'en premier lieu le gouvernement doit faciliter et accélérer la privatisation'). Finally, we added a further category of 'Indeterminate Signalled or Disguised' repairs which are characterised by the use of 'or' between the reparandum and reparatum (eg.: SS U 6 'in Familien aufwachsen oder in Heimen in Familien aufwachsen'). In Tables 23 and 24, we look at the total number of each type of repair as well as the number by interpreter. We will see that some examples of repairs are ambiguous and cannot be catalogued in one type only.



	Signalled	Juxtaposed	Disguised	Indetermi- Nate/ S or D	Total
<b>TW</b>	0	13 (+1)	0	0	13 (+1)
<b>SS</b>	0	5	0	0	5
<b>SS M</b>	0	7	2	0	9
<b>SS U</b>	0	7 (+1)	1	1	9 (+1)
<b>TC</b>	1	3	1	0	5
<b>SL</b>	0	0	4	0	4
<b>HU</b>	0	3	0	2	5
<b>MU</b>	1	1	0	0	2
<b>Total</b>	2	39 (+2)	8	3	52 (+2)

**Table 23:** *Input-generated different types of repairs*

	Signalled	Juxtaposed	Disguised	Indetermi- nate S or D	Total
<b>TW</b>	1	29 (+2)	0	0	30 (+2)
<b>SS</b>	0	8 (+1)	1	0	9 (+1)
<b>SS M</b>	0	25 (+1)	0	1	26 (+1)
<b>SS U</b>	0	11	0	0	11
<b>TC</b>	0	6	5	1	12
<b>SL</b>	0	10	6	0	16
<b>HU</b>	0	10	1	1	12
<b>MU</b>	0	3	0	0	3
<b>Total</b>	1	102 (+4)	13	3	119 (+4)

**Table 24:** *Output-generated different types of repairs*



Both Tables 23 and 24 show us a huge discrepancy in the total number of each type of repair. The total number of signalled repairs is three (i.e. 1.75%) while there are a total of 21 disguised (i.e. 12.2%), 141 (+6) juxtaposed (i.e. 82.45%) and six instances which are indeterminate Signalled or Disguised (i.e. 3.5%). Again here, the number of repairs added in brackets in Figures 22 and 23 correspond to ambiguous cases of repair which could fit in more than one category.

The total numbers tell us that interpreters have a tendency to juxtapose their repairs. They occasionally but very rarely signal the repair to the audience and in some cases, they disguise the repairs altogether. These different types of repairs are quite telling about the process of simultaneous interpreting itself and more specifically about the interpreter's deployment of processing capacities. If the interpreter signals the repair, in other words if s/he wishes to eliminate a previously held assumption, it is more likely to be while monitoring the input than while attending to his/her own output (respectively two and one). This shows that our interpreters are not willing to notify the listener of their own output monitoring while they might signal it when the repair is triggered by the original speaker's input.

The total number of disguised repairs (21, i.e. 12.2%) is rather small but shows the wish to strengthen or confirm a previously held assumption by hiding the repair from the audience who most probably will not notice it. The highest score is the number of juxtaposed repairs, in other words cases in which the interpreter confirms or strengthens a previously held assumption. This is an interesting result, which shows us that the vast majority of repairs (141 +6, i.e. 82.45%) are neither signalled nor disguised but are repairs where the interpreter offsets the increased processing load both for him/herself and the listener with the gain of accuracy of rendition.

If we now look at the breakdown of the different types of repairs per interpreter, we can see that the vast majority of interpreters do not signal their repairs, MU and TC only have one instance of input signalled repair while TW has one example of output signalled repair. These results are negligible. If we look at the disguised repairs, the situation is only slightly different. In the input section, we can see that one interpreter stands out with four disguised



repairs (SL) while SS M has two and both TC and SS U have one each; all the other subjects have zero. In the output section, we can distinguish two groups of interpreters, the first one (TC and SL) who respectively have five and six repairs while the second group with all the other subjects goes from zero to one. It seems interesting to note that in both input and output repairs, the same interpreter (SL) stands out with the highest score. It seems difficult to find out why this particular interpreter disguises his repairs more than the other subjects. The results show that half of his repairs (10 out of 20) are disguised. This could be due to a personal strategy applied during simultaneous interpreting but the scope of this study does not allow us to determine this.

The third type is the juxtaposed repairs, by far the largest category among all interpreters. In the input section, there is a distinct difference between TW (13 + 1) and the rest of the subjects, who range from zero to seven: SL (0), MU (1), TC (3), HU (3), SS (5), SS M (7) and SS U (7+1). In the output section, the interpreters seem to be divided into three groups. Two subjects stand out: TW (29 + 2) and SS M (25 +1) while four interpreters range from eight to 12: SS (8+1), SL (10), HU (10) and SS U (11) and finally a third group goes from three to six: MU (3) and TC (6). It seems interesting to note that the interpreter (TW) who stands out in the input category with 13 (+1) repairs, has the highest score in the output sample with a total of 29 (+2). Finally, we added a category of indeterminate Signalled or Disguised repairs, in which the interpreter links the reparandum and the reparatum with 'or'. This category does not contain many instances but out of a total of six examples (for both input and output categories), one interpreter (HU) has three instances, in other words half of the total. Generally, our results shown in Tables 23 and 24 tell us that the interpreters, apart from two exceptions (SL as explained above and TC, who shows a total of nine juxtaposed repairs compared with a total of eight signalled, disguised and indeterminate taken altogether), favour the juxtaposed type of repairs. In other words, our interpreters prefer to confirm or even strengthen a previously held assumption.

In summary, the quantitative analysis has shown the following:



- Generally, our interpreters show a tendency to repair their own output more often than attend to their translation of the original speaker's input.
- Our results show a major discrepancy between the total number of post-articulatory (A, E and D) and Mid-Articulatory repairs.
- Contrary to results obtained from research carried out by scholars on speech production, our total number of Error repairs is much lower than the total number of A, D and Mid-Articulatory repairs taken together. This allows us to posit that repairs are not simply about the correction of errors.
- Our interpreters show a tendency to juxtapose their repairs rather than disguise or signal them to the audience.
- Finally, our results show major discrepancies in the scores between individual interpreters. This suggests that there are different interpreter styles. Nevertheless, it is important to note that there are too few interpreters in the study for statistical trends to be taken as being characteristic of interpreter behaviour in general.

In the following section, we will present a detailed analysis of repair examples, illustrated by the corpus.

#### **4.4 Qualitative analysis: Input-generated repairs**

In this section, we will present a qualitative analysis of input-generated repairs. In our model of simultaneous interpreting for repair analysis, we allowed the monitor to have access to the original speaker's input, in other words to the speaker's production. Consequently, we suggested that the interpreter can monitor the input and produce what we call 'input-generated' repairs (for further details, see 3.6.6). The following sections will concentrate on various instances of post-articulatory as well as mid-articulatory input-generated repairs.

##### *4.4.1 Post-articulatory A-repairs*

According to Levelt, speakers repair the appropriateness of what they say because they realize, while speaking, that the "intended information needs qualification in view of the



context of expression" (Levelt, 1983: 52). In the simultaneous interpreting situation, the interpreter re-assesses the contextual effects being made available and the cost involved in terms of deployment of resources, in other words the interpreter is trying to find a balance between effectiveness and efficiency (Beaugrande and Dressler, 1981: 11). In our category of Input-generated Appropriateness repairs, we will look at examples in which the interpreter repaired his/her translation for appropriateness. The examples are sub-divided into three categories. Either the interpreter offers a more precise translation, adds output to the first alternative or repairs the coherence of the translation with its context.

#### 4.4.1.1 *From less to more precise*

In this first sub-category, the interpreter's repairs move from a less to a more precise translation.

##### 1. (SL 4/AL/Disguised)

(...) That support is is the key to meeting the many and diverse challenges small business  
(...)

owners will undoubtedly face in the [months and years ahead. I do not pretend to know

**[Und ich glaube, diese Unterstützung ist der**  
*And I believe this support is the*

what each and every challenge is going to be nor would I attempt to list all of them

**Schlüssel zur Lösung unserer Probleme und zur Meisterung der Herausforderungen**  
*key to solve our problems and to meet the challenges*

even if I had some sort of a crystal ball here this afternoon.

**deren wir uns denen wir uns in den zukünftigen Jahren gegenübersehen werden.**  
*which we ourselves, which we in the to come years face will*

In this instance, the interpreter starts with the utterance 'zur Lösung unserer Probleme' (to solve our problems) and repairs with 'zur Meisterung der Herausforderungen' (to meet the challenges). By repairing the first general solution with a more specific one, the interpreter



modifies his output in order to improve on the appropriateness of the translation. This is what Levelt calls a post-articulatory AL-repair, where the speaker repairs from a less to a more precise item (Levelt, 1989: 459). The first utterance is allowed to go through the monitor and is checked for appropriateness, then an alarm signal is sent to the speaker (i.e. the interpreter) who then decides to attend to the detected trouble and repair it. The reparandum and the reparatum are linked with the conjunction 'und' (and). This is a way of disguising the repair to the receiver, who will not detect the change. Here, the interpreter is attempting to reach greater resemblance to the input (Gutt, 1991: 23). The first solution 'zur Lösung unserer Probleme' does not closely resemble 'meeting the many and diverse challenges'. Therefore the interpreter decides to take action and repair.

In repairing this utterance, the interpreter is trying to improve the contextual effect for the listener and reinforce the content of the utterance. Both utterances correspond to the same meaning but differ in strength. The first one, of a general nature, sets the scene while the second one, more specific, renders the original input more accurately. Because the repair is disguised, we can say that the interpreter is adding contextual implications and at the same time, strengthening and confirming but not erasing a previously held assumption (Sperber and Wilson, 1986: 114). Intuitively, we can say that the strength of the second solution should be greater than the strength of the first one. The interpreter takes the time to decide to act on the signal sent by his inner monitor and produces an output, which is adequately relevant to the audience.

In a search for improved resemblance, the interpreter leaves out some of the information contained in the original input. Both ideas of 'many' and 'diverse' challenges are lost in the interpreter's output. Moreover, the interpreter is using the anaphor 'wir' (we) to refer to the original 'small business owners' and uses the generalization 'in den zukünftigen Jahren' (in the years to come) to render 'in the months and years ahead'. All of this suggests that the interpreter's deployment of processing resources is being taxed. The production effort (Gile, 1995a) spent on the repair has repercussions on the rest of the utterance. Not only are some of the elements omitted but it also triggers another repair immediately after this one (see corpus available on CD-ROM).



By modifying and improving the first utterance, the interpreter is apparently trying to resemble the original input. In this balancing act of cost and rewards, the interpreter is experiencing difficulties. By repairing, the interpreter also lengthens his output, thus increasing the processing costs both for himself and the receiver. However, we can hypothesize that the audience's processing cost will be increased minimally if at all as the repair is disguised, in other words the listener might not even detect the repair.

The following examples are similar:

## 2. (SS 41 M/AL/Disguised)

(...) I'm an optimist and e::: in that [sense I I believe that

(...) **viel schwieriger aber ich bin letztlich ein Optimist** [insofern als ich e:::  
*a lot more difficult but I am actually an optimist in that sense that I*

e::: e::: you can evaluate a lot of things including social security

**daran glaube** **daß man vieles be-beurteilen und bewerten**  
*in it believe that one a lot assess/judge and evaluate*

reforms at least we can give it a try (...)

**kann unter anderem auch die Reform von sozialen e::: (...)**  
*can among others also the reform of social, ...*

In this instance the interpreter decides to change the first solution and proposes a second one. Both verbs in German have the sense 'to evaluate' but the second one is more appropriate as the idea is to 'evaluate a lot of things'. The first solution 'beurteilen' is used in the sense of giving an opinion, judging something or assessing. The second verb 'bewerten' has the sense of judging or valuing. As in the example above, the first solution is more general than the second one. The interpreter's monitor detects the trouble and action is taken. Again, this is an example of AL repair where the interpreter repairs the appropriateness of the translation. In an attempt to resemble the original input ('evaluate a lot of things') the interpreter decides to change the first solution for an alternative. But it is worth wondering whether he is



gaining significantly in precision, in other words whether he is producing a contextual effect or only lengthening his output and thus increasing the processing cost, to himself, because he is lengthening the ear-voice-span, and to the audience, because it is asked to process extra material.

As in the example above, the reparandum and the reparatum are linked with the conjunction 'und' (and). By doing so, the interpreter is disguising the repair and therefore, the listener might not even detect that the interpreter repaired his utterance (apart from the slight hesitation 'be-beurteilen', which might suggest some type of difficulty to the audience).

### 3. (SS 1 U/AL/Juxtaposed)

(...)This is of course the main theme of this [European Regional Meeting and your pres  
(...)] **[Es gibt natürlich ein Hauptthema dieser**  
*There is of course a main subject of this*

ence in such numbers here today testifies to the importance of this subject (...)

**europäischen Regionaltagung und eben Ihre Anwesenheit Ihre zahlreiche**  
*European regional meeting and esp. your presence your numerous*

**Anwesenheit trägt dem Zeugnis (...)**  
*presence is a witness..*

In this instance, the interpreter starts her utterance with 'ihre Anwesenheit' and repairs by going back to add 'zahlreiche' (numerous). The time-lag is rather short. A conventional account of this example would look at it in terms of order of syntax, in other words the adjective, which comes before the noun in German as it does in English. However, as we are more interested in the reason why the interpreter repaired the utterance, it seems plausible to suggest that the interpreter realizes the information is not complete. She repairs the adequacy of her output and improves the coherence of the message for the receiver, or it could be argued that she is trying to improve the resemblance to the input. By adding the adjective 'zahlreich', the interpreter is adding information and is completing the coherence of the



translation and improving the contextual effect for the receiver. Although the repair is juxtaposed, the interpreter is not signalling it to the receiver.

#### 4. (HU 18/AL/Indeterminate Signalled/Disguised)

(...) In einer auch geschichtlich [zusammenfassenden Gegenüberstellung kommt  
*In a also historically summarizing comparison comes*

(...) **The body e::: is the [economy of the family. Historically the name**

er über die bekannt unterschiedliche Ausprägung der liberalen Rechten und der  
*he over the known different expression of the liberal right and the*  
**economics was the teaching about the standards that are prevalent in a home**

sozialistischen Linken in der Wirtschaft als Kapitalismus und Verstaatlichung zu einer  
*socialist left in the economy as capitalism and nationalization to a*  
**or in a household e::: there is he also made a comparison where he speaks about the**

für viele wahrscheinlich überraschenden Übereinstimmung im Persimivismus das  
*for perhaps surprising agreement in Persimivismus this*  
**different characteristics about the liberal rights in politics and the socialist left e:::**

heisst zu einer alles oder fast alles geltend oder zulassen was letztlich zu einem  
*means to something all or nearly all valid or permit which in the end to a*  
**capitalism and nationalisation he comes to a rather interesting conclusion e:::he**

Fallenlassen aller unbequemen Ge- und Verbote zu einem aufgeben der höchsten  
*dropping of all uncomfortable la- and bans to a giving up of the highest*  
**says he calls this permissiveness or permissivismus which is e::: m::: e::: a::: chara-**

Werte führt... Nur in einer wieder stärker durch eine Familienstruktur und andere  
*values lead... Only in a again strong through a family structure and other*  
**cteristic where everything is permitted e::: where everything that is not**

echte Gemeinschaften geprägte Gesellschaft (...)



*real communities marked society...*

**convenient may be eliminated (...)**

In this example, the interpreter gives a solution, which seems to correspond to the English version of a Latin word but then decides to revert to the correct 'permissivismus' although the original speaker had uttered 'persimivismus', in other words a slip of the tongue<sup>42</sup>. The second solution is more technical than the first one and hence the interpreter achieves greater resemblance to the original input by repairing. As for example 1 (SL 4), the interpreter starts with one utterance but his monitor detects that it is not sufficiently technical and decides to repair for appropriateness of the lexical item. In other words, this is an example of AL-repair. Here, the reparandum and the reparatum are linked with 'or', which is slightly different from examples 1 (SL 4) and 2 (SS 41 M). This gives the audience a clue that the interpreter is giving two solutions. However, this could also be the rendering of two alternatives in the original input. Therefore, we can say that it is difficult to determine whether or not this instance of repair is disguised or signalled. The repair triggers a series of hesitations (e::: m::: e::: a:::), which again shows that the interpreter is repairing at a certain cost to his processing resources.

#### 5. (SS 16/AL/Juxtaposed)

(...) The reforms being intro[duced need to be constantly evaluated as to their

(...) **[Les réformes qui sont présentées doivent être constam-**  
*The reforms which are presented must be constantly*

effectiveness. There is too much at stake both in terms of the many people

**ment évaluées quant à leur efficacité / Il y a trop de choses importantes des défis**  
*assessed regarding their efficiency There are too many things important challenges*

who rely on social security and the huge resources involved not to examine constantly

**trop importants pour les gens qui dépendent de la sécurité sociale ainsi que**  
*too important for people who depend on social security as well as*

---

<sup>42</sup> For further details on interpreters repairing speakers' errors, see Van Besien and Meuleman, 2004.



how the schemes could be improved. (...)

**des ressources astronomiques qui sont engagées (...)**

*resources      huge amounts of that are involved*

In this example, the interpreter partly repeats the lexical item and repairs 'choses' (things) with 'défis' (challenges). She goes from a very general, neutral and semantically empty lexis to a more specific one in order to render 'at stake'. The first solution could have been acceptable but instead, she decides to repair in an attempt to improve her first solution calqued on the source text. The interpreter's ear-voice-span is quite short because she is following the original speaker quite closely. This taxes the interpreter's use of the monitor function. She starts her output with a general and semantically empty solution ('choses') while still listening to more input and realising that she could refine her interpretation, hence the repair. By repairing the first solution, the interpreter is possibly increasing the listener's effort to understand the idea.

Further examples are:

6. (SS 8 M/AL/Juxtaposed)

I also hope that your time here in Dublin will be most [enjoyable and memorable      and

**[Ich hoffe ebenso daß Ihre Tag**  
*I hope      also      that your days*

that      many of you      will get a chance to move out of Dublin when

**Ihre Zeit die Sie in Dublin verbringen daß Sie sie geniessen und daß Sie die Gele-**  
*your time that you in Dublin are spending, that you are enjoying and that you have*

the conference is e::: over to see more of our country (...)

**genheit haben Dublin auch zu verlassen um damit hinaus zu kommen um mit was**  
*the possibility Dublin also to leave so that out to go and also something*

**mehr des Landes zu sehen (...)**

*more from the country to see (...)*



## 7. (TC 4/AL/Disguised)

The first one the policy and the planning e::: there[is three things most things

**activités.**  
*activities*

**[En ce qui concerne le premier point**  
*In terms of the first item*

the first one is e::: the government should accelerate privatisation liberalisation

**la planification et la promotion**  
*planification and promotion*

**en premier lieu le gouvernement**  
*first of all government*

of the sector so join publi-public sector e::: project privatisation is e:::

**doit e::: faciliter et accélérer la privatisation du secteur et e::: mettre sur pied des**  
*must facilitate and accelerate privatisation of the sector and set up some*

drastic measure so e::: to reach such a drastic

**projets conjoints publics et privés. La privatisation est une mesure très radicale**  
*projects common public and private. Privatisation is a measure very radical*

change some joint projects amam??? public public sector is very quite useful.(...)

**et des projets e::: conjoints publics et e::: privés (...)**  
*and some projects common public and private...*

## 8. (HU 12/AL/Indeterminate Signalled/Disguised)

(...) und [als Seele der Familie sieht er die Intin Intimität und die Erziehung... wobei er  
*and as soul of the family sees he the intimac intimacy and the education where he*

(...) [about the soul and the body of the family e:::as e::: the first e:::unit of

unter Intimität bedingungsloses oder besser gesagt unbedingtes, das heisst auch  
*under intimacy unconditional or better said absolute this means also*

**society. And what does he consider the soul of the family? The intimac intimacy and**

von der Leistung unabhängiges Angenommensein versteht wo Vertrauen wo  
*from the performance independent assumed understands where trust where*

**the education. Now what does he mean by intimacy? That means an unconditional**



Sinngebung wo Freude Ordnung Glaube Hoffnung und Liebe besteht. Und Er  
*meaning where joy order faith hope and love exist. And edu*  
**e::: m::: acceptance that does not determine is not determined be::: or is not limited**

ziehung als zweites wesentliches Element ist ihm zuallerst eine Kunst die wie  
*cation as second significant element is for him first an art which like*  
**by performance where confidence meaning pleasure enjoyment faith hope and**

jede Kunst auch der Inspirida Inspiration bedarf (...)  
*every art also the inspirida inspiration needs...*

**love reign. And upbringing or education (...)**

9. (SS 7 M/AL/Juxtaposed)

(...) I am confident [that you will have a most interesting and stimulating worthwhile

(...) **[Ich bin mir sicher daß Sie eine sehr interessante und e:::**  
*I am myself sure that you a very interesting and*

few days at this regional meeting I also hope that your time here in Dublin will

**anregende e::: Sitzung haben in den nächsten Tagen der regionalen**  
*stimulating session have in the next days of the regional*

be most enjoyable and memorable and that many of you

**Sitzung. Ich hoffe ebenso daß Ihre Tag- ihre Zeit die Sie in Dublin verbringen**  
*session I hope also that your day your time which you in Dublin spend*

will get a chance to move out of Dublin when the conference is e::: over to see more

**daß Sie sie geniessen und daß Sie die Gelegenheit haben Dublin auch zu verlassen**  
*that you it enjoy and that you the opportunity have Dublin also to leave...*

In all the examples in this category, the interpreter is repairing a lexical item in order better to resemble the input. The interpreter gives a second solution in an attempt to improve the appropriateness of the translation. What is significant about these examples is that none of these repairs was essential for the audience's understanding of the source text and that the



added contextual effect in each case is fairly minimal. However, the interpreters deemed it necessary to repair their first solution with another one and thus lengthened their own output and ear-voice-span. In doing so, it is possible to hypothesize that they increased both their own and also the audience's processing cost. There is thus evidence that interpreters' deployment of repair is not always triggered by significant trouble but rather forms part of a constant concern to improve resemblance, however slightly, and even when this incurs increased costs.

#### 4.4.1.2 Added output

In this category, we will present examples in which the interpreter is repairing by adding some output.

#### 10. (TW 14/AL/Juxtaposed )

We meet usually we meet by tele[phone conference...we meet we find we have to meet

**[Nous nous nous faisons des conférences par...**  
*We we we do conferences by*

about once every two months approximately to keep face to face contact to discuss de-

**téléphoniques e:::** **une fois tous les deux mois et et ensuite**  
*telephones once every two months and then*

tails of c[of-of projects we might be working on to discuss problems or frictions

**nous [avons contact...des contacts directs pour discuter des projets que nous**  
*we have contact contacts direct to discuss projects that we*

that may have arisen.

During the intervening period 'cause this can

**pouvons mettre en pied sur en en place pardon**  
*can put in place on in in place sorry*

**en essayant de ré-**  
*by trying to*

happen very easily and sometimes when you're not dealing with people face to

**soudre le problème les conflits et les frictions**  
*solve the problem the conflicts, the frictions*

**parfois**  
*sometimes*



face there can be misunderstandings people can get just take the wrong meaning out of

<b>ceci arrive</b>	<b>quand on on n'a pas le contact face à face</b>
<i>this happens</i>	<i>when we we don't have the contact face to face</i>

an e.mail message or something like that (...)

<b>et parfois e::les gens comprennent mal le message (...)</b>
<i>and sometimes people understand badly the message</i>

In this example, the interpreter either repairs 'le problème' with 'les conflits' or 'les conflits' with 'les frictions'. Both accounts are plausible. In any event, the interpreter is adding some information by repairing with a supplementary lexical item. As in examples 1 (SL 4), 2 (SS 41 M), 3 (SS 1 U) and 4 (HU 18), the interpreter is repairing the appropriateness of the translation by adding some lexical item, in other words it is another AL-repair. The original input has 'problems and frictions' and the interpreter starts by uttering 'le problème'. By using the definite article 'le', the utterance becomes too specific in French which would lead the audience to expect more information on that particular 'problem'. The input is plural, which indicates problems in general. Therefore, the interpreter decides to repair the first solution with 'les conflits'.

Another possible explanation of this example is that the interpreter repairs 'les conflits' with 'les frictions', which can be described as a closer match. The complex co-text is causing difficulties for the interpreter who has to deal with the difficult cluster 'telephone conference'. This is consistent with the hesitation ('nous, nous, nous...') which then lengthens the ear-voice-span; in other words, the memory effort is heavily taxed (Gile, 1995a). Moreover, the interpreter repairs a grammatical inappropriateness just before the instance we are looking at and the original input contains several repairs (see corpus available on CD-ROM) which will also have taxed the interpreter's processing capacities.

11. (SS 21 U/AL/Disguised)

(...) The reforms being introduced need to be [constantly evaluated as to their effecti-



(...)

**Die Reformen [die eingeführt worden sind] müssen**  
*The reforms which introduced have been must*

veness. There is too much at stake both in terms of the many people  
**ständig ausgewertet werden und bewertet werden.** **Es steht zu viel**  
*constantly evaluated be and evaluated be. There is to much*

who rely on social security and the huge resources involved not to examine constantly  
**auf dem Spiel was die soziale Sicherheit betrifft und die enormen**  
*at stake what the social security affects and the huge*

how the schemes can be improved.

**Ressourcen müssen ständig e::: bewertet werden.**  
*resources must constantly evaluated be.*

In this instance, the interpreter repairs the verb 'auswerten' with 'bewerten'. Both verbs in German are used in the sense of evaluating. The interpreter is reinforcing her first solution with a second verb, she is adding output but not new information. Therefore we can say that what is added is redundant. She links both with the conjunction 'und' (and), thus disguising the repair. However, she repeats 'werden', which forms part of the conjugated verb. This change of verb from 'auswerten' to 'bewerten' also has a consequence on the co-text, or more precisely the co-output of the interpreter. She uses the same verb 'bewerten' in her next utterance, either because the verb has not left her conceptualizer or because she wishes to emphasize the importance of the 'evaluation'. This adds to the cohesion of the interpreter's output. This repair also causes an increase in the processing cost both for the interpreter and for the audience.

In all the examples above, we have seen that the interpreter wishes to resemble the original input by adding a second solution to the first one, in an attempt to reinforce the idea and strengthen or confirm previous assumptions. As in the first category of Appropriateness repairs, this type of 'added information' is not necessary for the audience's understanding of the source text and is thus at least partly redundant. By wishing to add another possibility, the interpreter is increasing the processing cost both for him/herself and for the audience.



#### 4.4.1.3 Context dependent

In this last sub-division, we will look at appropriateness repairs where the interpreter repairs the coherence of his/her translation with its context. Here again, the interpreter's repair improves the resemblance to the input, therefore we can still talk of input-generated repairs.

#### 12. (SS 6 U/AC/Indeterminate Signalled or Disguised)

(...) One of our major concerns is to avoid a situation whereby many of our young people

(...)

**Unsere Hauptbelange**  
*Our main concern*

have grown up in homes where the [parents are unemployed and never have experien

ist **eine Situation zu vermeiden** [wo viele junge Menschen in e::: Familien auf  
is *a situation to avoid where many young people in families grow up*

ced the reality of employment (...)

**wachsen oder in Heimen e::: e::: in Familien aufwachsen** wo die Eltern immer  
*or in homes or in families grow up where the parents always*

**arbeitslos waren (...)**

*unemployed were (...)*

In this example, the interpreter repairs 'Familien' (families) with 'Heimen' (homes) and then reverts to the first solution of 'Familien'. The original input contains the ambivalent lexical item 'homes' and therefore creates a processing problem for the the interpreter who may be unsure whether it refers to a household or an institution, hence the repair. The lexis 'Heimen' in German is also ambiguous as it can signify a household/home or a social institution which could have caused confusion for the listener. Although this second solution could have been acceptable for a translation, the interpreter decides to repair on the basis of the context and thus improves the resemblance with the input. In this example, we can see that the interpreter is not only repairing for the correctness or adequacy of information, but rather to improve the cognitive environment of the receiver, which implies that the interpreter wants to ensure effective communication. This example, like example 4 (HU 18) earlier can be called



'indeterminate', in other words either signalled or disguised, as the interpreter links the reparandum and the reparatum with 'oder' (or) and thus does not make clear to the audience whether it is a repair or not.

### 13. (HU 16/AC/Juxtaposed)

(...) Als drittes Wesenselement der Familie und gewissermassen als ihren Leib sieht  
*As third significant element of the family and so to speak as its body sees*

(...) **family enterprises are considered particularly by the parents of those**

der [Spanier die Wirtschaft der Familie oder die Haushaltswirtschaft von der bekanntlich  
*the Spaniard the economy of the family or the household economy from which it is known*

**[who are looking for an apprenticeship are absolutely e::: preferable**

historisch ja jedes Wirtschaften ausgegangen ist und auch ihren Name Ökonomie hat als  
*historically each economy came from and also its name economics has as*

**as I said for the parents e:::. Now what is the third element of the**

Lehre oder Norm des Hauses oder des Haushalts. In einer auch geschichtlich zusammen-  
*teaching or norm of the house or of the household. In a also historically summarized*  
**family and the body the the soul and the body. The body e::: is the economy**

fassenden Gegenüberstellung kommt er über die bekannt unterschiedliche Ausprägung  
*comparison talks he about the known different markedness*

**of the family. Historically the name economics was the teaching about (...)**

In this instance, the interpreter utters 'the body', then hesitates with 'the, the' repairs with 'soul' and then reverts to 'body'. As in example 12 (SS 6 U), the interpreter is not sure of the ambivalent lexis 'Leib' which can signify both 'body' and 'soul'. The first translation is therefore repaired before the interpreter realizes, on the basis of the context, that the first solution was appropriate. This example is juxtaposed and also shows the interpreter's concern to resemble the input.



#### 4.4.1.4 Conclusion

In summary, we have seen that most A-repairs are lexical. They are called AL repairs and correspond to Levelt's AL category (from less to more precise) but they also represent the 'lexical' category; therefore we can call them ALL. We also introduced a new idea of context-dependent appropriateness repairs, called AC repairs.

Four repairs are disguised: 1 (SL 4), 2 (SS 41 M), 7 (TC 4) and 11 (SS 21 U) while three are indeterminate: 4 (HU 18), 8 (HU 12) and 12 (SS 6 U), and six are juxtaposed: 5 (SS 16), 6 (SS 8 M), 9 (SS 7 M), 10 (TW 14), 11 (SS 1 U) and 13 (HU 16). The disguised repairs show that the interpreter is controlling the processing load. Disguising the repair means that the interpreter can strengthen a previously held assumption (see Gutt, 1991: 27) without the audience detecting a repair. It is possible to hypothesize that disguised repairs tax the interpreter's and the audience's processing capacities less than juxtaposed or signalled repairs, in the sense that they do not involve a juxtaposition of possibilities or a signal that preceding output is to be disregarded.

This category of Input-generated post-articulatory A-repairs is interesting because it shows us that either by going from a less to a more precise utterance: 1 (SL 4), 2 (SS 41 M), 3 (SS 1 U), 4 (HU 18), 5 (SS 16), 6 (SS 8 M), 7 (TC 4), 8 (HU 12), 9 (SS 7 M), by adding some output: 10 (TW 14), 11 (SS 21 U) or by repairing for contextual reasons: 12 (SS 6 U), 13 (HU 16), the interpreter is trying to achieve greater resemblance with the original input and improve the contextual effect for the receiver.

Finally, we can say that the examples presented in the first two categories of Input-generated post-articulatory appropriateness repairs do not add any new information to the first solution. While the first sub-category 'from less to more precise' is partly redundant, the second one, called 'added output', is wholly redundant. This shows us that the interpreter is willing to sacrifice some efficiency for the sake of effectiveness. Moreover, in the case of wholly redundant repairs, examples 10 (TW 14) and 11 (SS 21 U), a new sub-category is emerging. These repairs can be described as 'Interpreter-generated'. Whereas in the other examples



therefore the interpreter is repairing to improve on the appropriateness of the message for the listener, in this particular case, the interpreter's repair is uttered for the interpreter's sake and it does not improve the cognitive environment of the listener. Toury's notion of translational norms is interesting in this regard. According to him (1995: 56-57), (...) "adherence to source norms determines a translation's **adequacy** as compared to the source text, subscription to norms originating in the target culture determines its **acceptability**" (bold in the original). The idea of 'interpreter-generated' repairs could be seen as a further notion in between the 'source norm' and the 'norms originating in the target culture' or the interpreter's wish to adhere to the 'acceptability of the target culture' (see discussion of Toury's norms applied to interpreting in Shlesinger, 1989b).

This new category of 'interpreter-generated repairs' is also interesting because it refines Levelt's point of view that A-repairs are "innovative reformulations". According to Levelt, when speakers decide to repair inappropriateness, they reformulate by "inserting fresh materials into the original utterance or start with a new utterance" (Levelt: 1989: 499). In the case of wholly redundant repairs, the interpreter is inserting material without adding any contextual effect or without being 'new'. Levelt's definition of A-repairs needs therefore to be revisited in the light of the simultaneous interpreting process.

The last sub-category called 'context-dependent' is interesting because it departs from the other two sub-divisions. Here, the interpreter is improving the contextual effect for the receiver in a wish to resemble the input or to match the context of the utterance. The repairs are related to the context of the utterance and add another dimension to the study of repairs.

#### *4.4.2 Post-articulatory E-repairs*

The layman's assumption about Error repairs is that the speaker corrects a mistake (Berg, 1986a). In this part, we will see that the category of Error repairs goes beyond the mending of an error. It departs from Levelt's definition, which focuses on the correction of an error (see Levelt, 1983, 1989) and invokes not only erroneous selections, contaminations but also



repairs where the interpreter changes the first solution to the opposite and repairs of a syntactic nature.

#### 4.4.2.1 Erroneous selection

14. (SL 1/EL/Disguised)

(...) I'm especially delighted however to be a participant [on this panel of distinguished

(...)

**[und es ehrt mich dass ich**  
*and it is an honour for me that I*

and accomplished representatives of the international small business community. I

**e::: dabei bin in einer Gruppe von von ausgezeichneten Experten der Wissenschaft**  
*am about in a group of of excellent experts in science*

think the presence of my fellow panelists as well as the size and enthusiasm of this con

**un auf dem Gebiet der Unternehmensorganisation.** **Ich glaube das zeigt alles**  
*and in the area of business organisation. I think that shows everything*

ference indicates clearly that small business remains a strong force throughout the world.

**bei dieser Konferenz dass die Klein-und Mittelbetriebe eine treibende Kraft der**  
*at this conference that the small and medium sized enterprises a driving force of the*

**Wirtschaft sind.**

*economy are...*

In this instance, the interpreter starts with 'Experten der Wissenschaft' (experts from sciences) and repairs with 'und auf dem Gebiet der Unternehmensorganisation' (and in the area of business organisation). This move repairs 'science' but is intended to represent 'small business community'. This corresponds to what Levelt calls an EL repair where the speaker utters something and realizes afterwards that "he made a lexical error" (Levelt, 1989: 461). Here, the interpreter starts with a very general idea, 'Wissenschaft' but realizes that 'experts in science' is erroneous because of the inadequate effect in interpretive resemblance (Gutt, 1991: 23). In order to resemble the original input, he repairs. Another explanation is that the



interpreter realized he uttered 'Wissenschaft' (science) instead of 'Wirtschaft' (economy), which is a slip of the tongue. The co-text also shows some processing difficulties for the interpreter who summarizes both ideas of 'distinguished and accomplished (representatives)' with 'ausgezeichnet' (excellent). This already shows that the interpreter spent some of his 'listening and analysis effort' (Gile, 1995a) on the synthesis of two adjectives before the instance of the repair.

Despite the repair, the new solution does not render the original 'international small business community' accurately, the erroneous solution has not been amended and the interpreter produces a second solution, which is grammatically inappropriate. Furthermore, this causes processing difficulties for the interpreter who, in the next utterance, misses some information (see corpus available on CD-ROM).

By linking the reparandum and the reparatum with the conjunction 'und' (and) the interpreter is disguising the repair to the audience. This decreases the deployment of processing capacities by the audience and has the effect of strengthening the first assumption. In other words, the listener will not know that the interpreter changed the first solution for a second alternative and will not realize that the interpreter is eliminating the first assumption (Gutt, 1991: 27). Hence, the impression may be given that two distinct categories of experts are being named.

In the following example, the same interpreter, later in the conference, repairs another erroneous selection:

#### 15. (SL 18/EL/Disguised)

(...) Toward that end and under rubric of both the ICSB and the ISBC we

**(...)wichtige Rolle bei der Bewältigung dieser Herausforderungen in der Zukunft**  
*important roles for the meeting of these challenges in the future*

should encourage improved cooperation [among small business  
**spielen wollen... und unter der Rubrik der ICSB und [ECSB in diesem Bereich**



*play want to...and under the rubric of the ICSB and ECSB in this domain*

*organisations and provide a forum for discussing ways*

**sollten wir die Zusammenarbeit unter kleinen Interessensvertretungen der**  
*should we the co-operation between small interest representations of*

*in which both government policy-makers and others*

**Unternehmen fördern und Foren schaffen e::: in denen wir nach Möglichkeiten**  
*businesses promote and fora create in which we possibilities*

*with a stake in the global market can cooperate with small business*

**suchen können wie die Unternehmen und die Vertreter der Behörden und**  
*look for can how the businesses and the representatives of authorities and*

*owners.... In addition we need to exchange ideas (...)*

**Regierungen partnerschaftlich zusammenarbeiten können... Darüber hinaus (...)**  
*governments in partnership work together can... Moreover...*

In this instance, the interpreter decides to repair 'der Behörden' (of the authorities) with 'der Regierungen' (of the governments). The original input has 'government policy-makers and others with a stake in the global market'. At first it is not obvious that the interpreter is repairing but upon closer inspection, we can see that the interpreter realizes that 'Vertreter der Behörden' (representatives of the authorities) does not adequately represent the original idea of 'policy makers' in the original input. Therefore, he decides to repair 'Behörden' with 'Regierungen' which gives the idea of government, if not of 'policy makers in government'. This is again an example of EL (lexical) repair.

By repairing, the interpreter increases the processing load and thus does not render another part of the input, i.e. 'and others with a stake in the global market'. In his attempt to resemble the original input, the interpreter faces an increased processing load and cannot retrieve parts of the original utterance from his working memory. Again, as in example 14 (SL 1), the interpreter links the reparandum and the reparatum with the conjunction 'und' (and), which disguises the repair. This means that the listener is unlikely to detect the repair.



The following examples are similar:

16. (MU 2/EL/Signalled)

(...) [I welc...I welcome Mister Gerald Hinteregger executive secretary of the United

(...) [**Herzlich willkommen heisse ich Herrn Gerald Hinteregger Exekutiv-**  
*Warm welcome I Mr. Gerald Hinteregger executive*

Nations Economic Commission for Europe....

and I

**sekretär des Wirtschafts-und Sozialrats der Vereinten Nationen für Europa.**  
*secretary of the economic and social council of the United Nations for Europe.*

welcome Mister Bombassei Director of the Community Action for

**Entschuldigen Sie der Wirtschaftskommission für Europa. Ich begrüße Herrn**  
*Sorry of the economic commission for Europe. I welcome Mr.*

Enterprises General Direction twentythree (...)

**Rainieri Bombassei Direktor (...)**

*Rainieri Bombassei director...*

17. (SS 24 M/EL/Disguised)

(...) The problems systems of [social security are now facing as you

(...) **die e:::Sitzung e:::morgen leiten [im Anschluß an der die die Ansprache**  
*the session tomorrow lead after the the the address*

well know are due to the major social demographic and economic changes that have

**des Kommissars. Die Probleme e::: der sozial e::: Sicherung wie wir alle**  
*of the commissioner. The problems of the social security as we all*

been taking place in recent decades and which are set to continue for

**wissen gehen nicht zu e::: zurück auf die sozialen und demographischen und**  
*know go not back to the social and demographic and*

the foreseeable future.

They include

**ökonomischen Wandeln in den letzten Jahren und der auch in den nächsten**



*economic change in the last years and the also in the next*

the growth in unemployment particularly long term unemployment e:::(...)

**Jahrzehnten wahrscheinlich weiter vorgehen wird. (...)**  
*decades possib- possibly further continue will...*

In all instances above, we have seen that the interpreter uttered an inappropriate lexical item and decided to repair in order to achieve improved resemblance with the original input. Three repairs are disguised: 14 (SL 1), 15 (SL 18) and 17 (SS 24 M) while one is signalled: 16 (MU 2). It is important to note that a disguised repair smoothes the processing load of the listener but also that the listener has to make sense, or retrieve coherence from two items. In other words, a disguised repair eases the processing in one way but still adds to it to a certain extent. Furthermore, examples 15 (SL 18) and 17 (SS 24 M) show that the interpreter's decision to repair has consequences on the rest of the co-output (see corpus available on CD-ROM for further details).

4.4.2.2 Contamination

In the following examples, the interpreter is repairing a contamination from the original input.

18. (SS 3/EL/Juxtaposed)

(...) My department is very privileged to co-host this [meeting with ISSA.

(...) **Donc je ne pouvais pas vous en faire part.** [Mon département a l'honneur  
*So I could not you tell about it. My department has the honour*

The ISSA is now in existence for over 70 years and from an  
**e:::d'accueillir cette conférence** **e:::...de l'- la**  
*to welcome this conference to*

initial 9 members in 1927 has grown today to 340 members organisations in some



parrainer ( ). **Mon département mon ministère est adhérent de l'AISS**  
*sponsor it My department my ministry is a member of IASS*

130 countries.

My department

**depuis e::: plusieurs années. Comme vous le savez nous avons des membres**  
*for several years As you know it we have members*

celebrated last year its 50<sup>th</sup> anniversary of it was proud to have been (...)

**de plus de 130 pays depuis e::: 9 ans donc . (...)**  
*from more than 130 countries for the past 9 years so.*

This is an example in which the interpreter utters 'accueillir' (to welcome/to host) and repairs the first solution with the verb 'parrainer' (to sponsor). The interpreter decides to change the first solution in an attempt to achieve optimal resemblance with the original input. This is an example of lexical repair (EL). By repairing with this second verb, the interpreter is presumably trying to render the idea of 'co-hosting'. However, the verb 'parrainer' does not render the idea inherent in the original 'co-host'. The verb in English has a different connotation, in other words, the Department mentioned is not the only host of the conference. The solution chosen by the interpreter could be ambiguous for the listener. In trying to find a more precise verb, the interpreter is slightly changing the meaning and the change incurs a processing cost. We can also hypothesize that the interpreter most likely knows the meaning of 'co-host'. Therefore, this shows evidence of a repair being attempted even when there is no time or capacity for monitoring the contextual effect.

Moreover, this repair triggers another repair in the next utterance (see example 21: SS 4). The first repair will have taxed the interpreter's deployment of processing capacities and the interpreter may have spent more effort on production and less on listening and analysis. This can be described as another sacrifice in addition to the interpreter's monitoring.

The interpreter's processing capacities are heavily taxed as she summarizes the information and changes the meaning of the utterance. Indeed, from the beginning, the speaker (the minister himself) is associating the ISSA with his department. Then, he gives more details on the association in order to show the importance it gained over the years ('from an initial



nine members in 1927 (...) to 340 member organisations in some 130 countries'). Not only is the semantic content changed in the interpreter's output but the idea conveyed could be confusing for the audience (eg: 'comme vous le savez, nous avons des membres...'). The use of the personal pronoun refers to 'mon ministère' in the output although the ISSA should be the subject and not the 'department for social affairs...'. In this instance, the information contained in the input caused a difficulty for the interpreter. Both repairs and possibly the different figures and dates appear to lead to an overload of processing capacities. However, it seems important to note that in this instance, the repair occurred at the beginning of a typical opening speech and that the interpreter had the script in the booth.

The following examples are similar:

#### 19. (SS 9 U/EL/Juxtaposed)

(...) This new emphasis on active measures which embraces not only the unemployed

(...) **Der Betonung liegt bei aktiven Maßnahmen die die**  
*The emphasis is on active measures which*

in the conventional sense but also the disabled and lone parents is likely to

**Arbeitslosen nicht in konventioneller Weise erfassen sondern auch die**  
*the unemployed not in a conventional sense affects but rather also the*

be a continuing feature of social security schemes for the unemployed for the foresee-

**Behinderten und Alleinerziehenden** **die für die voraussehbare**  
*disabled and lone-parents who for the foreseeable*

able future. The scale of this change in Ireland is illustrated by the fact that in 1992

**Zukunft ein Charakteristikum des sozialen Sicherheitssystems darstellen werden.**  
*future a feature of the social security system will represent*

only[1% of total unemployment spending in my Department went on active measures.

**[Bis 2 und...im Jahre 92 war nur 1% des gesamten Arbeitslosigkeit**  
*Until 2 and in the year 92 there was only 1% of the whole unemployment*



This year it has increased to 16%. We can no longer passively wait for economic

**Arbeitslosenausgaben.**  
*unemployment spending.*

**Das ist bis zum jetzten Jahr auf 16% angestiegen.**  
*This has until this year to 16% risen.*

upturns to solve our unemployment problems (...)

**Wir können nicht weiter darauf warten daß (...)**  
*We can not any longer wait to (...)*

20. (MU 7/EL/Juxtaposed)

(...) On the other hand we have[to consider the environment as another

(...) **[Andererseits müssen wir die Umwelt als weiteren**  
*On the other hand must we the environment as another*

success factor for small and medium-sized enterprises. A favorable en-

**Erfolgsfaktor für die KMBs ins Auge fassen. Eine günstige Umwelt ein günstiges**  
*success factor for the SMEs take into consideration. A favorable environment, a favorable*

vironment for SMEs can generally be characterised by freedom democracy fair com-

**Klima für die KMBs ist charakterisiert durch Freiheit (...)**  
*climate for the SMEs is characterised by freedom ...*

petition and a spirit of partnership...(.)

21. (SS 4/EL/Juxtaposed)

(...) My department is very privileged to co-host this [meeting with ISSA.

(...) **Donc, je ne pouvais pas vous en faire part.** **[Mon département a l'honneur**  
*So I could not tell you about it. My department has the honour*

The ISSA is now in existence for over 70 years and from an

**e:::... d'accueillir cette conférence**  
*to welcome this conference*

**e:::...de l'- la**  
*to be*

initial 9 members in 1927 has grown today to 340 members organisations in some 130

**parrainer ( ). Mon département mon ministère est adhérent de l'AISS depuis**



*the patron of it. My department my ministry is member of the ISSA for*

*countries.*

*My department celebrated*

**e::: plusieurs années. Comme vous le savez, nous avons des membres de plus de**  
*many years. As you know it, we have members from more*

*last year its 50<sup>th</sup> anniversary of it was proud to have been (...)*

**130 pays depuis e::: 9 ans donc . (...)**  
*than 130 countries for the past 9 years...*

In all examples above, the interpreter is repairing a perceived lexical inappropriateness, which was caused by contamination from the original input. In example 19 (SS 9 U), the difficult co-text, which contains several figures, taxes the interpreter's deployment of processing capacities. The lexical item 'Arbeitslosigkeit' (unemployment) is uttered following the original input 'unemployment'. The interpreter's ear-voice-span is rather short and in her attempt to reach interpretive resemblance, she is repairing and cannot complete her sentence (see 4.4.3 on the will to achieve completion).

In example 20 (MU 7), the interpreter is also repairing a lexical item. The reparandum 'Umwelt' is repaired with the reparatum 'Klima'. This is an example of a delayed repair as the same lexical item had been uttered by the interpreter earlier in the same utterance but not repaired (see corpus available on CD-ROM). This time, the interpreter either decides to change to inappropriate contamination to achieve an appropriate collocation or it could be a response to the striking ambiguity of 'environment' in the input at this point in time.

Finally, in example 21 (SS 4), the interpreter repairs the 'calque' from the English with 'ministère'. It is interesting to note that she had not repaired it earlier in the previous utterance (see corpus available on CD-ROM). This seems to suggest that 'département' had not been picked up by the external monitoring loop (see Levelt, 1989) the first time around. This instance follows another repair (see example 18: SS 3). The original input contains several difficulties, for example the acronym ISSA and several figures, which in turn has taxed the interpreter's listening and analysis effort.



In the following examples, the repair is syntactic:

22. (SL 17/ES/Disguised)

(...) [Indeed we have contributed much already to the economic and  
(...) **[dass die Gesellschaft die zukünftigen Herausforderungen meistert. Wir haben**  
*that the society the future challenges meets We have*  
social good of our respective countries. But we cannot and should  
**bisher schon sehr grosse Beiträge zu den wirtschaftlichen und e::: sozialen Gütern**  
*until now already very big contributions to the economic and social goods*  
not have to bear that burden alone. We must insist on fair treatment  
**und Dienstleistungen ge:::macht aber diese Last meine Damen und Herren**  
*and services made but this burden ladies and gentlemen*  
by both government and big business (...)  
**können wir nicht allein tragen. (...)**  
*can we not alone carry...*

23. (TW 46/ES/Juxtaposed)

(...)to match supply and demand within the [teleworking scenario because we find (...)  
(...) **de faire conco[rder la demande l'offre et la demande**  
*to match demand supply and demand*  
**parce que nous avons déjà (...)**  
*because we have already...*

In example 22 (SL 17), the interpreter repairs 'Gütern' (goods) with 'Dienstleistungen' (services). The German lexis 'Güter' means 'goods' in terms of item, material or freight. In the context of the original input, the idea of 'economic and social good' has a different meaning. The interpreter realizes the inappropriateness or contamination and corrects it with 'Dienstleistungen' (services). In this instance, the interpreter is repairing to achieve interpretive resemblance to the input.



In example 23 (TW 46), the interpreter realizes that she uttered 'la demande', needs to go back and change it to the idiomatic expression 'l'offre et la demande'. The choice of verb ('faire concorder') does not collocate with the French expression 'l'offre et la demande'. Despite the short ear-voice-span, we can hypothesize that the interpreter stored the idiomatic expression 'supply and demand' in her working memory and only retrieved the last part (see 3.6.6).

#### 4.4.2.3 Change to opposite

In the examples below, the interpreter starts by uttering a solution and repairs by changing it to the opposite.

24. (TC 19/EL/Signalled)

(...)	the	[or related	in	particular to a couple of issues equipment certification practices
(...)	<b>[pour d'autres domaines.</b>			<b>Et par</b>
	<i>for other domains</i>			<i>And for</i>

e:::	the			regulations that relate to certifi-
<b>exemple e:::</b>	<b>les pratiques de certification du matériel</b>			
<i>example</i>	<i>practices of certification of material</i>			

cation practices should be e:::	transparent and streamlined as much as possible	e:::	the
<b>les règlements e:::</b>	<b>concernant ces</b>	<b>pratiques doivent être</b>	
<i>rules</i>	<i>about those</i>	<i>practices must be</i>	

use of standards		I think that from the TIU's
<b>transparents et harmonisés dans la mesure du possible l'utilisation de normes (/)</b>		
<i>transparent and harmonised if</i>	<i>at all possible</i>	<i>using norms</i>

perspective we would encourage	<u>the use of international standards</u>	as
<b>Je pense que du point de vue de la TIA e:::</b>	<b><u>nous</u></b>	
<i>I think that from the point of view of the TIU we</i>		



opposed to e::: the criteria, standards or national standards e::: and then the ????????

<b>préférons des normes nationales</b>			<b>et::: plutôt des normes</b>	
<i>prefer</i>	<i>norms</i>	<i>national</i>	<i>and rather</i>	<i>norms</i>

??? purchases ??? of the specially government owned telecommunication's

<b>internationales et non pas des e::: normes e:::</b>		<b>à caractère</b>	<b>privatif</b>	<b>ou</b>
<i>international</i>	<i>and not</i>	<i>norms</i>	<i>of a nature</i>	<i>privative</i>
				<i>or</i>

operators. We expect already that the privately owned telecom operators will

<b><u>national</u></b>	<b>et::: maintenant qui s'appliquent à l'ensemble des opérateurs</b>			
<i>national</i>	<i>and now</i>	<i>which apply</i>	<i>to the whole</i>	<i>of operators</i>

procure in a fashion that's e::: makes commercial sense but e::: for governments that's not

**ainsi les :::**

*so the*

always a given so for government (...)

**la passation des marchés(...)**

*transfer of markets ...*

In this example, the interpreter repairs 'des normes nationales' with 'des normes internationales et non pas des normes à caractère privatif ou national'. He hesitates and then uses the adverb 'plutôt' which indicates he is changing his mind. In this case, he signals his repair to the audience. He realizes that his output was not appropriate and not only repairs it but he also re-emphasizes the idea by adding 'et non pas des normes à caractère privatif ou national'. We could say here that the interpreter is eliminating a previously-held assumption (Gutt, 1991: 27) and is signalling it to the listener.

The interpreter had introduced the idea of 'standards' (normes) in the utterance prior to this one, which could lead to an expectation on the part of the audience for more information on the standards used. The incorrect output could have caused some confusion for the listener and increased the processing effort. Consequently, the interpreter decides to repair and to signal the repair. It is also important to note that the repair happens after an unfinished



sentence (see co-text) and that the interpreter has to deal with a very strong Japanese accent from the original speaker.

The following are similar examples:

25. (TW 18/ES/Juxtaposed)

(...) So we work to promote teleworking to individuals and very very importantly

(...)	<b>Donc</b>	<b>nous essayons de travailler</b>
	<i>So</i>	<i>we try to work</i>

[to business because if you don't have the demand for teleworkers

**au niveau [individuel mais aussi au niveau des entreprises parc'qu'il y a s'il n'y a**  
*at the level individual but also at the level of companies because there is, if there's*

their having a supply is really quite valueless ah... we work to

**pas de demande au de pour le télétravail ce n'est pas la peine d'avoir une**  
*not demand in of for telework it is not worth having a*

inform people about it (...)

**main d'oeuvre (...)**

*workforce ...*

26. (HU 11/ES/Juxtaposed)

(...) und [als Seele der Familie sieht er die Intin Intimität und die Erziehung... wobei er  
*and as soul of the family sees he the intimac intimacy and the education where he*

(...) [about the soul and the body of the family e:::as e::: the first e:::unit of

unter Intimität bedingungsloses oder besser gesagt unbedingtes, das heisst auch  
*under intimacy unconditional or better said absolute this means also*

**society. And what does he consider the soul of the family? The intimac intimacy and**

**von der Leistung unabhängiges Angenommensein versteht, wo Vertrauen wo**  
*from the performance independent assumed understands where trust where*



**the education. Now what does he mean by intimacy? That means an unconditional**

Sinngebung wo Freude Ordnung Glaube Hoffnung und Liebe besteht. Und Er-  
*meaning where joy order faith hope and love exist. And edu-*

**e::: m::: acceptance that does not determine is not determined be::: or is not limited**

ziehung als zweites wesentliches Element ist ihm zuallerst eine Kunst die wie  
*cation as second significant element is for him first an art which like*

**by performance where confidence meaning pleasure enjoyment faith hope and**

jede Kunst auch der Inspirida Inspiration bedarf (...)  
*every art also the inspirida inspiration needs...*

**love reign. And upbringing or education (...)**

In example 25 (TW 18), the interpreter repairs from an affirmation to a negation but also from an assertion to a conditional: 'parc'qu'il y a/'s'il n'y a pas'. While storing more input, the interpreter realizes the inaccuracy of her output and amends it.

In example 26 (HU 11), the interpreter starts with the construction 'does not determine' and repairs with 'is not determined be...' In this example, the interpreter is trying to follow the original speaker who is also repairing himself (see in corpus: 'Intimität oder besser gesagt unbedingtes, das heisst auch von der Leistung unabhängiges Angenommensein...'). In this instance, the interpreter is simply repairing and changing to the opposite in order to reach interpretive resemblance with the input.

#### 4.4.2.4 Conclusion

In summary, we have seen that the generally held assumption about the nature of Error repairs has been refined. Error repairs go beyond the simple correction of a mistake. Indeed, they include the erroneous selection of a lexical item: examples 14 (SL 1), 15 (SL 18), 16 (MU 2), 17 (SS 24 M) but they also include contaminations from the original input: examples 18 (SS 3), 19 (SS 9U), 20 (MU 7)/or ambiguity, 21 (SS 4), 22 (SL 17), 23 (TW 46) as well as



changes to opposite: examples 24 (TC 19), 25 (TW 18) and 26 (HU 11). A majority of seven E-repairs are juxtaposed, four are disguised while two are signalled (see section 4.3 above for more details on quantitative analysis).

Interpreters repair in order to reach interpretive resemblance with the original input and to reduce the processing load by complying with target language grammatical, syntactic and lexical norms. All the examples of E-repairs show us the difficulties in deploying processing capacities during simultaneous interpreting. It is also interesting to note that a slight majority of eight out of a total of 13 repairs are either immediately followed or preceded by another instance of repair (see corpus available on CD-ROM for more details). This shows that the repair itself causes an overload of processing capacities and taxes the interpreter's resources. However, despite the concomitant activities involved in simultaneous interpreting, we have seen that the interpreter attempts to repair even when there is no time or capacity for monitoring the contextual effect (see example 18: SS 3). This is further evidence for the wish to improve the resemblance with the input.

#### *4.4.3 Post-articulatory D-repairs*

Levelt's category of D-repairs (Different-repairs) contains examples where the speaker "may, while speaking, change his mind and realize that he better produce a different word order than the one he is currently formulating, (...) where the speaker may realize that another arrangement of messages would be easier or more effective" (Levelt, 1983: 51). At first, the examples below do not seem to fit in the category of 'repairs'. However, this is further evidence that repairing is not only about error correction. Repairing can also mean a change in the word order, or it can give an alternative syntax or it can alter the direction of one's output in order to complete it.

##### *4.4.3.1 Incompletion/completion*

27. (TW 8/Juxtaposed)



(...) So eh Telework Ireland is the professional association of teleworkers

(...) **[Alors, notre association est une association profes-**  
*So our association is an association profes-*

in Ireland. We are a voluntary organisation

**sionnelle de télétravailleurs en Irlande (/)** **Nous sommes une organi-**  
*sional of teleworkers in Ireland We are an organisation*

and our membership consists of people who are actually self-employed teleworkers

**sation bénévole et nos adhérents** **sont e:::** **des personnes qui**  
*voluntary and our members are people who*

or telecontractors as they are sometimes called and telecom-

**sont des des travailleurs indépendants ou alors qui travaillent sous contrat mais**  
*are teleworkers independent or who work under contract but*

muters hey but sure probably you all know are employed people who are

**à domicile et donc qui sont qui font et comme vous le savez il y a des entreprises**  
*at home and so who are who do and as you know it there are companies*

working for a company on a full-time basis but working at a distance for that company

**qui emploient des personnes pour travailler à temps plein pour eux mais à**  
*which employ people to work on a full-time basis for them but*

hey (...)

**distance (...)**  
*at a distance*

In this example, the interpreter changes the direction in mid-utterance. She abandons her attempt when she says: 'qui sont, qui font', and repairs her output, giving rise to a multiple repair. First, the interpreter utters 'qui sont', then repairs this with 'qui font' and repairs it again with 'comme vous le savez'. The reparandum 'qui sont' and the reparandum/reparatum 'qui font' are attempts to represent 'telecommuters' in the original input; 'et comme vous le savez' is the reparatum and allows the interpreter to move on with new output. In other words, the interpreter abandons her first solution, repairs with another one, then abandons



that repair in order to repair with a third solution. The first repair is allowed to go through the monitoring loop once more as indicated in chapter 3, section 3.6.6 above.

There is a shift of grammatical subject in the interpreter's output. While 'qui sont, qui font' refers to 'nos adhérents', 'il y a des entreprises qui...' changes the perspective. This means that the interpreter is taking a new departure. The repairs are juxtaposed and although the interpreter is not signalling them to the listeners, the multiple repair mechanism is easily detectable by the audience.

The lexical item 'telecommuter' proved difficult for the interpreter. The original co-text is not easy to render. In French, terms like 'telecontractors' do not find a simple equivalent and are rendered with a much longer expression than in English. In her attempt to resemble the original input, the interpreter is looking for a better solution. Before the actual repair, there was another hesitation 'des personnes qui sont des, des travailleurs indépendants' (see co-text). This shows that already the interpreter has some difficulty and is trying to cope with the notion of 'self-employed'. The lexis 'telecontractors' also taxes the interpreter's processing capacity as she is looking for a suitable solution in French and adds an opposition which is not necessary, i.e.: 'des travailleurs indépendants ou alors qui travaillent sous contrat mais à domicile'.

The original speaker also changes the direction of the input, when she says: '(...) telecommuters hey but sure probably you all know are employed (...)'. The use of 'but' suggests a contradiction or just a concession. The speaker follows the beginning of her utterance and explains what a 'telecommuter' is. This causes a difficulty for the interpreter who is following the speaker quite closely, in other words her ear-voice-span is rather short. The interpreter does not know how the sentence is going to unfold so it is risky to take a decision to leave out some of the information. Instead, she starts afresh. As a result, there is a loss of information for the audience (it seems important to note that the term 'telecommuter' is used for the first time here). The interpreter has spent more time and effort on the production of the lexical item 'telecontractor' and therefore cannot retrieve the 'telecommuter'



from her working time memory. In an attempt to survive, the interpreter changes direction, which allows her to reach completion of her output.

The following examples are similar:

28. (SS 22 U/Juxtaposed)

(...) As many of you will know Mr. Sherman has been president [of the ISSA since  
(...)] **[Viele von Ihnen]**  
*Many of you*

1992. He has much experience associated security policy and administration  
**wissen daß er Präsident der IVSS seit 92 ist**  
*know that he president of the ISSA since 92 is*

having been director general on the social insurance board in his native Sweden  
**und er hat sich im besonderem mit e::: Ge-General e::: er ist er**  
*and he has himself in particular with ge general he is he*

Please welcome Mr. Sherman.

**ist ein Schw- ein Schwede von e::: Herkunft. Ich geb- übergebe an Herrn Sherman.**  
*is a Sw- a Swede from origin. I giv- give over to Mr. Sherman.*

29. (SS 1/Juxtaposed)

Good morning, everyone e::: I hope you [all e::: enjoyed if you did]  
**Bonjour tout le monde. [J'espère que]**  
*Good morning everybody. I hope that*

the last couple of days. Some of you have been here...earlier we had some good weather  
**si c'est les derniers jours si vous êtes arrivés en avance de la conférence**  
*if it is, the last days if you arrived early to the conference*

in Ireland but e::: unfortunately the weather is to turn today....

**ont été agréables pour vous e::: malheureusement ...**



*were enjoyable for you*

*unfortunately*

30. (SS 1 M/Juxtaposed)

(...) E:: firstly I'd like to introdu[ce the first speaker for the opening session

(...) **[Zunächst mal möchte ich unseren ersten Sprecher**  
*First would like I our first speaker*

Ireland's minister for Social Community and Family affairs Mr.Dermot Ahern

**vorstellen den Minister für Sozialordnung Gemeinschaft und Familie**  
*introduce the minister for social order community and family*

T.D. whose department is co-hosting this e:::meeting. Minister Ahern has been

**Dermot Ahern e:::er sein e:: Ministerium ist Mitgastgeber**  
*Dermot Ahern he his department is co-host*

minister of the department for for a year now. (...)

**dieser Veranstaltung(...)**  
*of this event...*

In example 28 (SS 22 U), the interpreter first hesitates and then repairs 'General' with 'er ist...'. The original input contains a difficult cluster of information: 'he has much experience associated security policy and administration having been director general on the social insurance board...'. This causes a delay in the output of the interpreter who seems to be influenced by the title of the person 'director general' and utters 'Ge-General' but decides to stop, abandons the utterance and starts afresh with the origin of the speaker: Swedish. It is also interesting to note that this repair triggers other repairs later on in the same utterance ('Schw-ein Schwede', 'Ich geb-übergebe'...).

In example 29 (SS 1), the interpreter repairs 'j'espère que' with 'si c'est les derniers jours' and repairs this again with 'si vous êtes arrivés...'. Like for example 27 (TW 8) this is an instance of multiple repair. Although the original input does not seem to contain any particular difficulty for the interpreter to process, she still repairs in the interest of survival and completion of her utterance. Moreover, the interpreter's ear-voice-span is quite short and



consequently, the interpreter is trying to follow the input closely. This, in turn, leads to cumbersome syntax in French where the subject is separated by an embedded clause: 'les derniers jours, si vous êtes arrivés en avance de la conférence, ont été agréables'. The output includes representation of all the input but at a syntactic processing cost. This example shows that the audience will need to use more effort to understand, which means that the resemblance is achieved at a certain cost.

In example 30 (SS 1 M), the interpreter repairs the anaphoric personal pronoun 'er' with the possessive adjective 'sein'. By doing so he is changing the subject of the sentence and hence the direction. The first utterance could have been continued. Two elements may have taxed the interpreter's processing capacities: first, the long title used in the input and the acronym 'TD', which means member of parliament in Ireland and is not rendered in the output. Secondly, the interpreter, immediately afterwards, has to deal with the relative pronoun 'whose' and starts with 'er', realizes that it might be difficult to complete the clause, hence decides to abandon the first solution to achieve a more easily completable clause.

Other examples are:

31. (TW 19/Juxtaposed)

(...) And people sometimes have a very very wrong idea of what teleworking is they

(...) **Et parfois e:::** **les gens ont une**  
*and sometimes people have an*

think that just because they have a computer at home that [suddenly and sorry and

**idée erronée de c'qu'est le télétravail ils pensent [qu'il s'agit simplement**  
*idea erroneous of what it is telework they think it is about simply*

time on their hands some time on their hands...maybe when children are at

**d'avoir un ordinateur à la maison et aussi du temps...c'est-à-dire quand les enfants**  
*having a computer at home and also time in other words when the children*

school or something that suddenly they can begin to make money for themselves which



sont à la maison...

*are at home*

**et ils se disent que peut-être qu'ils essay- qu'ils**

*and they tell themselves that perhaps, that they try, that they*

won't really interfere with their works their lifestyle very much but they'd just

**pourront avoir un revenu et que ils pourront donc l'insérer prati**

*will be able to have an income and that they will be able to so, insert it practi- without*

be a sort of a handy little income, well (...)

**blème**

*problems*

**dans leurs vies (...)**

*in their lives (...)*

32. (TW 34/Juxtaposed)

(...) So in fact we like to practice what

we preach and this

**(...)physiquement présents dans un centre urbain donc nous aim nous essayons**

*physically present in a centre urban so we lik- we try*

is one good demonstration and this training programme has received huge interest

**donc de pratiquer c'que nous prêchons**

*so to practice what we preach*

**et ce...notre programme a attiré**

*and this our programme attracted*

from throughout Ireland, there are a hundred places available on the pilot project

**énormément d'intérêt a suscité beaucoup d'intérêt**

*huge interest provoked a lot of interest*

**il y a cent**

*there are 100*

and we received over five hundred applications

so you know

**places disponibles et nous avons reçu plus de 500 demandes**

*places available and we have received more than 500 applications*

we [think that there's a huge opportun there a huge opportunity to develop this type

**[Donc nous pensons qu'il c'est un secteur très porteur**

*So we think that ther, it is a sector very important*

**que nous**

*that we*

of training and eh...

vocational type training.

**avons une bonne chance une bonne perspective e::: de formation.**

*have a good chance a good perspective of training.*



In this first subcategory, we have seen that all examples are juxtaposed. The interpreter abandons the first solution and repairs with a different one. The various instances provide evidence of the willingness to admit a loss in the interest of 'survival' (see Monacelli, forthcoming), in other words the interpreter is avoiding the risk of not being able to complete his/her utterance.

4.4.3.2 Completion (from a nominal to a verbal construction)

33. (TC 5/Juxtaposed)

(...) [Public public sector is very quite useful. The government should e::: applicate such

(...) [**projets e:::conjointes publics et privés e::: sont fort utiles**  
*projects joint public and private are very useful*

e::: project. The second one is e::: the possible application of a com-  
**pour e::: parvenir à cet objectif. Le gouvernement devrait donc favoriser ce type de**  
*to be able to reach that goal. The government should so promote this type of*

munication project with other sectors such as electricity e::: since the concept of

**projet.** En deuxième lieu m:::m::: la il  
*project. Secondly, the it*

electricity ??? one that provides a basic  
**s'agit de rassembler les projets dans le domaine des télécommunications avec ceux**  
*is about bringing together the projects in the area of telecommunications with those*

challenge most opportunity to e::: to construct the telecommunication  
**de l'électricité puisque e::: le réseau e::: d'électricité**  
*in electricity because the network of electricity*

network combined together. So if some some more investment (...) **(...)**  
**fournit une aide précieuse pour la création et l'établissement**  
*provides a hand precious for the creation and setting up*







*it's actually the to promote the concept of work to make understand to the*

*because we find there is still there's a lot of hype there's a lot of talk (...)*

**employeurs et aux salariés**

*employers and to the employees*

**la les b...les avantages (...)**

*the the b...the advantages*

35. (SS 33 M/Juxtaposed)

(...) I [am also joined here on the podium but many of you will know by Mr. Dalmer

(...) **[Thema sprechen werden (/) und ich habe ebenfalls hier auf dem Podium**  
*theme speak will and I have also here on the podium*

Hoskins General Secretary General of the ISSA em after both speakers have

**Herr e::: Dalmer Hoskin**

*Mr. Dalmer Hoskin*

**den General Sekretär der IVSS (/)**

*the general secretary of ISSA*

delivered their papers e::: there will be an opportunity for a general discussion and I am

**nach der dem Bi-Vorträge gehalten worden sind gibt es eine**  
*after the the Bi-papers delivered will be is there an*

inviting e::: you to put any question or comments from the floor.

Our first

**Gelegenheit zur Diskussion und der wir ich möchte Sie einladen dann Ihre Fragen**  
*opportunity for discussion and the we I would like you to invite then your questions*

speaker so is (...)

**zu stellen oder Kommentare (...)**

*to ask or comments (...)*

In example 34 (TW 16), the interpreter starts by uttering 'la' and changes the direction of her output by repairing with the verbal construction 'de promouvoir le concept de télétravail'. The interpreter could have finished her utterance by saying 'c'est en fait la promotion de...' but instead, she decides to repair. In an attempt to resemble the original input, the interpreter uses the verb 'promouvoir' and finishes her utterance by finding an easier option. A consequence of the repair is the inaccurate rendering of the original input: 'the teleworking



concept' is changed to 'le concept de travail'. This obviously has not been detected by the monitor and hence, was not repaired by the interpreter.

Example 35 (SS 33 M) is an instance of a multiple repair where the interpreter starts with 'und der', repairs with 'wir' and then repairs again with 'ich'. This instance of repair follows two other examples (see SS 31 M/SS 32M in corpus available on CD-ROM). The interpreter has just experienced a difficulty (see previous repairs) which triggers this repair. The rather short ear-voice-span also adds to a more complex deployment of processing resources. The interpreter needs to start again twice before finding the appropriate pronoun 'ich' and finish the utterance. The co-text is not particularly complicated but contains one name (Dalmer Hoskins) and one acronym (ISSA). Although both elements could be found in the conference material, they are bound to tax the interpreter's resources. The use of 'der' can be understood either to be the masculine article or the relative pronoun related to 'Dalmer Hoskins'. This is confusing for the audience, who need to deploy more processing resources in order to understand. The repair from a nominal to a verbal construction attempts to reach better resemblance with the source text but is not an easier option.

4.4.3.3 Completion (swap of determiner)

In the following examples, the interpreter stops and repairs in order to complete the utterance. The repairs are not from a nominal to a verbal construction. Instead, the repairs go from a nominal to another nominal utterance. In other words, the interpreter swaps one determiner for another.

36. (SS 5 U/Juxtaposed)

(...) It [includes providing in work benefits through our family income supplement

(...)	<b>[Und f es gibt außerdem soziale Sicherheit</b>	<b>und durch eine</b>
	<i>And f there is also social security</i>	<i>and through an</i>

scheme and our transitional back to work allowance.

**Verbesserung des Steuersystems.**                      **Und außerdem gibt es unser e:::**



improvement of the tax system.

And also there is our

Our overall objective has been to make work pay and, in particular to make it pay

**Reintegrations e::: -beitragssystem**  
*reintegration contribution system*

**unsere Ziele**  
*our objectives*

for families. One of our major concerns is to avoid a situation whereby

**waren insbesondere es den Familien zu erleichtern.**  
*were specifically it for the families to relieve.* Ein  
*A*

many of our young people have grown up in homes where the parents are

**unsere Hauptbelange ist** **eine Situation zu vermeiden wo viele junge**  
*our main concern it is a situation to avoid where many young*

unemployed and never have experienced the reality of employment (...)

**Menschen in e::: Familien aufwachsen oder in Heimen oder in Familien**  
*people in families grow up or in homes or in families*

**aufwachsen wo die Eltern (...)**  
*grow up where the parents ...*

In this instance, the interpreter starts by uttering 'ein' and swaps the determiner for 'unsere'. She committed herself too soon to a determiner that she could not use to finish her sentence. This example can also be analysed as clipped pronunciation. Moreover, the original input 'one of our major concerns' was not processed quickly enough for the interpreter to start her utterance. It is interesting to note that the first change of direction did not allow the interpreter to monitor her own output, as the German 'unsere Hauptbelange ist' is grammatically inaccurate. In other words, this part of the utterance did not go through the monitoring loop again. This instance of repair follows other examples in the previous utterances (see corpus available on CD-ROM). Not only is the co-text quite problematic for the interpreter but the short ear-voice-span does not allow her to utter the appropriate determiner in the first place. In her attempt to ease the listener's processing effort and achieve better resemblance with the source text, she decides to start afresh and repair.

The following are similar examples:



37. (TW 32/Juxtaposed)

(...) So in fact we like to practice what [we preach and this  
(...) **physiquement présents dans un centre urbain donc nous** [aim-nous essayons  
*physically present in a centre urban so we lik- we try*

is one good demonstration and this training programme has received huge interest  
**donc de pratiquer c'que nous prêchons** **et ce::: notre programme** a attiré  
*so to practice what we preach and this our programme attracted*

from throughout Ireland there are a hundred places available on the pilot (...)  
**énormément d'intérêt a suscité beaucoup d'intérêt (...)**  
*a huge interest , provoked a lot of interest ...*

38. (TC 20/Juxtaposed)

(...) I think that from the TIU's perspective we would encou[rage the use of interna-  
[Je pense que du point de  
*I think that from the point*

tional standards as opposed to e::: the criteria standards or national standards e:::  
**vue de la TIA e::: nous préférons des normes nationales** **et**  
*of view of the TIU we prefer norms national and*

and then the ??? purchases ??? of the specially government owned  
**plutôt des normes internationales et non pas des e::: normes e::: à caractère**  
*rather norms international and not some norms with a specificity*

telecommunication's operators. We expect already that the privately-owned telecom  
**privatif ou national et::: maintenant qui s'appliquent à l'ensemble des**  
*depriving or national and now which can be applied to the whole of*

operators will procure in a fashion that's e::: makes commercial sense but e::: for  
**opérateurs** **ainsi les:::**  
*operators so the*



governments that's not always a given

so for government owned telecom-

**la passation des marchés**  
*transfer of markets*

munication's authorities e::: we would encourage the ??? practices to be open and

**se fera**  
*will be done*

transparent non discriminatory. This these one of the ideas that came to my mind

**e::: de telle sorte que nous puissions le faire de manière aussi**  
*in such a way that we can it do in a manner as*

but I just said a cursory e::: glance at this (...)

**transparente que possible (...)**  
*transparent as possible...*

In example 37 (TW 32), the interpreter starts her utterance with 'et ce' and decides to repair by changing the determiner to 'notre'. The short ear-voice-span is noticeable and taxes the interpreter's deployment of processing resources. The original input contains difficulties, however the speaker is not reading aloud a written speech and the free flow of speech creates an input which, sometimes might seem difficult to render for the interpreter. This happens, for example, when the speaker says: 'and this is one good demonstration and this training programme (...)'. The prosody of the original speaker's utterance does not give any clues to the interpreter as to where the clause is starting and finishing. This further taxes the interpreter's production effort. It is also important to note that the interpreter's output contains various other repairs in the immediate co-text. This further shows that the interpreter's processing resources are under strain. In this instance, the interpreter does not achieve optimal resemblance but tries to ease the listener's processing resources.

In example 38 (TC 20), the interpreter utters 'ainsi les', then hesitates and repairs with 'la passation des marchés', in other words he changes the determiner from 'les' to 'la'. The interpreter is experiencing a difficulty with the cluster 'privately-owned telecom operators'. He is looking for the solution but the lexical item is not available in his long-term storage. In



his input, the original speaker makes the distinction between 'government owned telecommunication's operators' and 'privately owned telecom operators'. In his output, the interpreter is struggling with the first cluster, already repaired in the previous utterance (see corpus available on CD-ROM) and therefore, cannot process the idea of the original input. In an attempt to reach completion, the interpreter swaps the determiner.

Other examples where the interpreter repairs by swapping the determiner are (see corpus available on CD-ROM for more details):

Examples	Original utterance	Reparandum	Reparatum
39 (TC 7/ Juxtaposed)	more investment	un	des (investissements)
40 (TW 38/ Juxtaposed)	People	ceux	ces, les personnes
41 (TW 11/ Juxtaposed)	Example of	de	une
42 (TW 26/ Juxtaposed)	Software localisation	des	la

**Table 25:** *Examples of input-generated Different repairs (Completion/swap of determiner)*

We have seen in both subcategories called 'completion' that the interpreter was repairing in the interest of achieving a complete utterance, either by changing the direction from a nominal to a verbal construction or by swapping the determiner. All examples quoted are juxtaposed and one in each subcategory is a multiple repair.

#### 4.4.3.4 Syntactic

In the following examples, the interpreter stops and repairs some syntactic trouble.

43. (SS 14/Juxtaposed)



(...) A major report on pensions [is due to be presented to me later this week

(...) **[Un rapport très important sur la réforme des**  
*A report very important on the reform of*

which is the fruits of wide consultation with all interested parties (...)

**retraites      sera présenté je vais le présenter      un peu plus tard cette semaine**  
*pensions      will be presented, I will present it      later on      this week...*  
(...)

In this example, the interpreter starts with 'sera présenté' and repairs with 'je vais le présenter'. She could have finished her sentence by saying: 'sera présenté à mon cabinet en fin de semaine' but prefers to repair the verbal expression. By changing the subject of the verb, she changes the meaning of the sentence. It looks like she wishes to attribute the responsibility for the 'presentation' to the speaker. The change of direction in this instance is not appropriate as it could lead to some confusion for the audience. The passive construction 'sera présenté' is impersonal. The interpreter decides to repair and tries to re-introduce the personal reference contained in the input. In other words, a residue of the source text personal reference is recovered via the repair but it is wrongly attributed due to the pressure on resources. This is an obvious attempt at improved resemblance with the input. However, the repair does not achieve it and the information is inaccurate for the audience. In this example, the repair did not ease the audience's processing effort.

#### 44. (SS 15 U/Juxtaposed)

(...) The ageing of the population      is also a major challenge for Ireland under

(...) **Durschnitts liegt und unser Ziel ist es es weiter auf 7% bis zum Jahre 2000 zu**  
*average      is      and our goal it is, it further by 7% before      2000 to*

[social security as it is for virtually all other European countries.

**[re-reduzieren. Die Bevölkerungsveraltung ist außerdem ein große**  
*re-reduce.      The population ageing      is also      a major*

Our European e::: population ageing

will not peak



**Herausforderung für Irland im im und dem irischen Sozialsystem**  
*challenge for Ireland in in and the Irish social system*

however for at least 20 years later than for most European countries so we have a bit  
**unser unsere Bevölkerungsalterung wird nicht in in den nächsten 20 Jahren**  
*our our population ageing will not in in the next 20 years*

longer to prepare for it. That doesn't mean however we are putting reform on the long  
**erst in 20 Jahren ihren ihren Höhepunkt erreichen das bedeutet nicht daß wir die**  
*not before 20 years its its peak reach this means not that we the*

finger. (...)

**Reformen hinausschieben. (...)**  
*reforms put on the long finger...*

In this instance, the interpreter commits herself to a construction but decides to change the direction and repairs her first solution 'in den nächsten 20 Jahren' with 'erst in 20 Jahren' in an attempt to resemble the original input. The original input 'will not peak for at least 20 years later than for most...' is problematic. The non-standard syntax of the input is bound to cause difficulties in the processing of information for the interpreter. It can be explained by contrasting 'will not peak for 20 years' with 'will not peak until at least 20 years after...'. Because of this repair, some of the original input is lost: 'later than for most European countries so we have a bit longer to prepare for it'. This might be important for an audience coming from several European countries, in particular the German-speaking listeners who might be included in this.

The co-text also seems problematic for the interpreter who hesitates, repairs and utters grammatical errors ('re-reduzieren', 'ein große Herausforderung', 'im im und dem irischen Sozialsystem', 'unser unsere Bevölkerungsalterung'). The hesitation in the interpreter's output immediately before the repair ('in in den nächsten 20 Jahren'...) is caused by the verb 'to peak' in the original. The interpreter is looking for a verb to resemble the input. It seems important to note that this repair might tax the listener's processing capacities.



Other examples are: 45 (HU 17/Juxtaposed), 46 (TW 22/Juxtaposed), 47 (SS 30 M/Juxtaposed), 48 (SS 19 M/Juxtaposed), 49 (TW 15/Juxtaposed) and 50 (SS 39 M/Juxtaposed) (see corpus available on CD-ROM for further details).

#### *4.4.3.5 Conclusion*

This category of Different repairs is rather large and contains a total of 24 examples, all of which are juxtaposed repairs. However, even if all repairs are juxtaposed, some hesitations in the interpreter's output can signal some type of trouble for the listener: see examples 28 (SS 22 U), 30 (SS 1 M), 33 (TC 5), 38 (TC 20), 39 (TC 7), 47 (SS 30 M) and 48 (SS 19 M). Some examples are multiple repairs: examples 27 (TW 8), 28 (SS 22 U), 29 (SS 1), 35 (SS 33 M), 40 (TW 38) and 46 (TW 22). This tells us that the interpreter needs more than one attempt in order to produce appropriate output. In other words, the first reparatum is allowed to go through the monitoring loop a second time. It also shows that interpreters repair and deploy further processing at the risk of spending more effort on their outputs. This shows again a wish to improve the effectiveness at the cost of efficiency (Beaugrande and Dressler, 1981: 11).

Generally, this input-generated Different repair category shows that the interpreter wishes to reach completion by abandoning the first solution (examples 27 to 32), by changing syntax from a nominal to a verbal construction (examples 33 to 35), by swapping the determiner (examples 36 to 42) and finally that interpreters also try to repair syntactic trouble (examples 43 to 50). The examples analysed in this category show that interpreters do not always reach resemblance with the original input and do not necessarily ease the audience's deployment of processing resources (see examples 34: TW 16, 35: SS 33 M, 37: TW 32 and 43: SS 14); in other words interpreters can be less successful while repairing in an attempt to complete their utterances. In conclusion, we have seen that completion is the key point in this category and may be an important driver of the interpreter's motivation.

#### *4.4.4 Mid-Articulatory repairs*



The second category of repairs in Levelt's study is called 'covert repairs'. Levelt defines them as a 'default category' where the monitoring/editing is pre-articulatory (Levelt, 1983: 55; Levelt, 1989: 466). In the examples below, we will see that interpreters utter some part of a word, stop in mid-flow and repair the utterance. Therefore, these instances will be called 'Mid-Articulatory' repairs and defined as being neither post-articulatory nor pre-articulatory but in between (for further details, see section 2.5).

#### 4.4.4.1 Completion

In the following sub-section, we will see that the interpreter is repairing in order to be able to complete her utterance.

51. (SS 23 U/Juxtaposed)

(...) As many of you will know Mr. Sherman has been president of the ISSA since

(...) **Viele von Ihnen**  
*Many of you*

[1992. He has much experience associated security policy and administration

**[wissen daß er Präsident der IVSS seit 92 ist**  
*know that he president of the ISSA since 92 is*

having been director general on the social insurance board in his native Sweden

**und er hat sich im besonderem mit e::: Ge-General e:::** **er ist er**  
*and he has himself in particular with ge-general* *he is he*

Please welcome Mr. Sherman.

**ist ein Schw- ein Schwede von e::: Herkunft. Ich geb- übergebe an Herrn Sherman.**  
*is a Sw- a Swede from origin. I giv- give over to Mr. Sherman.*

This instance contains two mid-articulatory repairs. First, the interpreter hesitates and repeats 'Schw-' to utter 'ein Schwede von Herkunft'. This first instance follows a difficult context where the interpreter left out quite a bit of information and had already repaired (see SS 22 U in corpus available on CD-ROM). This shows that the original input caused an







economic realities and the criteria of the Maastricht Treaty

**Umgebung.** **In Europa ist die ökonomische Realität und die Kriterien der**  
*environment. In Europe is the economic reality and the criteria of the*

has lead to the need to reduce public spending

**Maastricht- des Vertrags von Maastricht haben dazu geführt daß e::: die e::: daß**  
*Maastricht- of the Treaty of Maastricht have to this lead that the that*

As social expenditure constitutes a large part of (...)

**die Ausgaben der Öffentlichkeit ?? reduzieren zu müssen (...)**  
*the expenditure of the public to reduce has to...*

In this second example, the interpreter seems to be following the original input very closely, in other words, the ear-voice-span is extremely short. It looks like an automatic response when the interpreter just utters 'Maastricht', goes back knowing that it is called 'der Vertrag von Maastricht' and therefore, repairs because of the expression. Therefore, we can say that this example meets the standard of intertextuality as the repair depends "upon knowledge of one or more previously encountered texts" (Beaugrande and Dressler, 1981: 10). If the interpreter had said 'der Maastrichter Vertrag' and hence made an adjective out of the name of the town 'Maastricht', the audience would have understood it. In other words therefore, both create the same contextual effect but one is easier to process. Nevertheless, the interpreter decides to repair her utterance in order to reach completion of her output. Both offerings would have facilitated completion. But the repair would satisfy the interpreter's standard of acceptability in the target language. This seems to be a major motivation for the interpreter. This instance of mid-articulatory repair follows several unfinished utterances in the interpreter's output (see co-text). All of this increases the difficulties for the interpreter in the deployment of processing capacities.

#### 4.4.4.2 Conclusion

In this category of Input-generated mid-articulatory repairs, we have seen that generally, interpreters wish to reach closure, or that they repair to complete their utterance for the



audience's sake rather than merely resemble the input. Although they are slightly different from the rest of the corpus, these examples can still be defined as repairs because the interpreter is changing his/her production and does so in mid-utterance. Both repairs in this category are juxtaposed, which means that the interpreter is not signalling the repair to the receiver. Although we can only hypothesize as to what the interpreter would have uttered if she had completed the first utterance, the category shows, nevertheless, that monitoring is occurring during the production of speech and not only afterwards, which proves the existence of a monitoring loop before as well as during articulation.

#### *4.4.5 Synthesis*

In the above analysis, we have used Levelt's categories of repairs and adapted them to the purposes of this study. Four categories emerged: three different types of post-articulatory repairs (A, E, D) and one category of mid-articulatory repairs.

First, we presented examples of Appropriateness repairs (A-repairs) where interpreters repair either by going from a less to a more precise utterance, by adding some information or repair the coherence of their translation with its context. The first subcategory improves the resemblance towards the original input while the second one reinforces the first solution with added information and the third one matches the context of the utterance. By repairing the appropriateness of the output, the interpreter is improving the contextual effect of the utterance on the listener. It can be seen as another way of reinforcing ideas, of giving clues to the audience and hence improving the receiver's cognitive environment, or the set of assumptions of one individual (Sperber and Wilson, 1986: 38-39). All of this is done at some cost for the interpreter who will have to deploy added processing capacities and effort (Gile, 1995b: 161-178) in order to be able to cope with the incoming input. While repairing, the interpreter is still processing further information and producing more output. This is quite different from the repairs Levelt analysed in his study of speech production (Levelt, 1983, 1989) in the sense that we are not simply looking at spontaneous speech production. The decision for the interpreter to make an A-repair has to be weighed against the possible loss of information either before or after the repair itself. The interpreter needs to find a balance



between the cost of making a repair and the effect of the repair itself, which would be in accordance with the principle of relevance theory as noted in chapter 2 above.

As we have seen at the end of the A-repair category, interpreters also repair the appropriateness of the message by adding some redundant information. This type of repairs does not improve the informativity of the utterance (Beaugrande and Dressler, 1981: 8) but the interpreters still decide to make the repair and hence spend more resources. Not only is this category a new finding but it also calls for a new subcategory of 'Interpreter-generated' repairs where the interpreter is repairing for him/herself. It seems probable that this subcategory of repairs would be low in cost effectiveness.

Finally, we included several examples of AC repairs where the interpreter repairs the coherence of the utterance on the basis of the context. These examples are highly relevant to this study as they show that interpreters will take risks in repairing their output in order to resemble the original input. By repairing the coherence of their translation, they improve the contextual effect for the receiver. Inevitably, the repair is also made at some cost for the audience. Some repairs are disguised and hence can be seen as strengthening previously held assumptions. However, it is not always the case, as we will see later with other categories.

The Error-repair category showed us that the general assumption held about E-repairs needs to be revised. We saw that Error repairs were not just a correction of a mistake. In this part, we showed that interpreters repair an erroneous selection of lexical items, a contamination from the original input, change their output to the opposite or make a syntactic repair.

It is interesting to note that three out of four repairs of an erroneous selection presented above are disguised (see examples 14: SL 1, 15: SL 18 and 17: SS 24 M) and the interpreter uses the conjunction 'und' ('and') to link the reparandum and the reparatum. This allows the interpreter to strengthen and confirm a previously-held assumption for the listener who will not be able to detect the repair. This will increase the interpreter's deployment of processing capacities but ease the listener's processing cost. Due to the concomitant activities involved in simultaneous interpreting, the examples of E-repairs above also show the occurrence of



contamination from the original input. All examples, apart from one, are juxtaposed. These indicate that the interpreter wishes to modify the output but not signal the erroneous choice to the audience. By repairing the contamination, the interpreter is improving the listener's understanding of the information. The category where the interpreter repairs by changing to the opposite of what he has just said could be seen as simple slips of the tongue. However, we have seen that the various reasons why the interpreter repaired go beyond this. One example is signalled and hence eliminates previously-held assumptions.

Finally, the last category of post-articulatory repairs is called Different repairs (D-repairs). At first, the examples look like they do not correspond to the definition of a repair. However, we have seen that this category is further evidence that repairs are not only the simple correction of a mistake. This category contains numerous examples, which show that the interpreter is willing to admit a loss in the interest of survival, which entails the interpreter trying to complete his utterance even at an increased processing cost. All examples of D-repairs, even if juxtaposed, are bound to increase both the interpreter's and the listener's processing cost. It lengthens the interpreter's output but at the same time allows him/her to reach completion.

One example of D-repair does not fit into the categories mentioned above and seems ambivalent:

53. (TW 43/Juxtaposed)

(...) So [we're not looking only at the telecommuting scenario where people move  
 (...)donc [**qui contribueront évidemment à la réalisation de ces op des ces pos-**  
*so which will contribute obviously to the implementation of these opp, of these*

their job from Dublin let's say for example to Galway or Connemara or Donegal  
 sibilités. Nous n'avons par exemple il ne s'agit pas de déplacer  
 possibilities. *We don't have, for example, it is not about moving*



whatever we're also looking at what possibilities that are actually create new work  
**les per-personnes      mais nous      voilons vouillons voulons voir quelles sont**  
*peop, people              but    we                              want to see which are*

through teleworking                              and the Council's meeting (...)

**les nouvelles possibilités de télétravail et donc (...)**

*the new      possibilities of teleworking and so...*

In this example, the interpreter decides to take a new departure by abandoning the first solution. She starts her utterance with 'nous n'avons' and repairs it with 'il ne s'agit pas de (...)'. Both constructions are quite different. The original input which starts with 'we' seems to have influenced the beginning of the interpreter's output but this is where the ambivalence lies as we cannot ascertain this contamination. The interpreter commits herself to a certain structure but decides to change it. This repair comes after another one in the previous sentence and is also followed by another one in the next utterance (see corpus available on CD-ROM). Because of all these changes, the interpreter also misses some important information: the place names 'Dublin, Galway, Connemara and Donegal'. All in all, this repair allows the interpreter to move on and complete her utterance as much as possible but at a certain cost.

The last category of repairs is the Mid-Articulatory one. Levelt, in his study, made a distinction between post-articulatory (overt) and pre-articulatory (covert) repairs. We have shown above that in this last category, repairs occur after the interpreter has overtly produced some part of the utterance. Therefore we decided to redefine Levelt's pre-articulatory category and call these examples mid-articulatory, where the utterance of a word or fixed expression is interrupted in mid-flow.

Mid-articulatory repairs occur when the interpreter wishes to achieve completion of the utterance. The examples analysed above show that the interpreter's monitor can intercept an utterance before it is completely uttered. This mid-flow interruption does increase the interpreter's deployment of processing resources but is outweighed by the fact that the



interpreter manages to reach completion of the utterance for the audience's sake. All examples of mid-articulatory repairs analysed above show that the interpreter could have finished her utterance but instead decides to repair and by doing so, increases her deployment of processing resources. One example is also ambivalent:

54. (SS 8 U/Juxtaposed)

(...) The scale of this change in Ireland is illustrated by the fact that in 1992

only[1% of total unemployment spending in my Department went on active measures.

**[Bis 2 und im Jahre 92 war nur 1% des gesamten Arbeitslosigkeit]**  
*Until 2 and in the year 92 there was only 1% of the whole unemployment*

This year it has increased to 16%. We can no longer passively wait for economic

**Arbeitslosenausgaben. Das ist bis zum jetzten Jahr auf 16% angestiegen.**  
*unemployment spending. This has until this year to 16% risen.*

upturns to solve our unemployment problems (...)

**Wir können nicht weiter darauf warten daß (...)**  
*We can not any longer wait to (...)*

In this instance, the interpreter starts by uttering 'bis zwei und', stops in mid-flow and repairs with 'im Jahre zweiundneunzig' (in the year 92). After having uttered 'bis zwei und' the interpreter realizes that she made a mistake by uttering 'bis' (until) and therefore stops in mid-flow to repair the utterance with 'im Jahre 92'. Therefore, this instance could be described as a Mid-articulatory repair as well as an example of E-repair. While the interpreter is starting to utter the date, she can hear the Figure '1%'. This complicates the input. Her coping strategy is to abbreviate the date and say 'im Jahre 92' instead of 'im Jahre 1992'. By then she knows that she cannot spend too much of her processing resources on the date as there is also a percentage figure to follow. It is also interesting to note that the repair might have triggered the grammatical mistake 'des gesamten Arbeitslosigkeit' instead of 'der gesamten Arbeitslosigkeit', which was not picked up by the monitor (and is followed by another repair,



see corpus available on CD-ROM). In this example, there is an overriding concern to resemble the input and complete the utterance.

In this sub-category, we have seen that the interpreter repairs in mid-flow in order to reach completion of an utterance. All examples quoted above are juxtaposed. We can note that the interpreter is not only trying to reach completion but also reaches 'improved completion'. The repair allows the interpreter to complete the utterance therefore, even if sometimes the repair is not necessary, see both examples 51 (SS 23 U) and 52 (SS 26 U).

In summary, we can say that contrary to most commonly held assumptions about repairs, the number of Appropriateness, Different and Mid-Articulatory instances outweighs the number of Error repairs. The repairs we analysed can either be juxtaposed or disguised in which case they will most probably confirm and/or strengthen previously held assumptions or they can be signalled and therefore eliminate a previously held assumption. Most input-repairs we analysed above were done at a certain cost both for the interpreter and the listener. Most repairs were either next to another difficulty or even next to another repair (see 4.4.2.5). The short ear-voice-span noticed in numerous examples also added to the difficulty for the interpreter.

## **4.5 Qualitative analysis: Output-generated repairs**

In this section, we will present a qualitative analysis of output-generated repairs. In the model of simultaneous interpreting for repair analysis presented above (section 3.6.6) we suggested that the monitor has access to the interpreter's output as well as to the interpreter's own production. This gives rise to what we call 'output-generated' repairs. In the following sections, we will focus on different instances of post-articulatory and mid-articulatory output-generated repairs.

### ***4.5.1 Post-articulatory A-repairs***



In this section, we will look at examples in which the interpreter is repairing the appropriateness of his/her output more or less independently of the input. We will see that the interpreter improves the idiomaticity of the translation, repairs an interference, adds information to the first alternative or repairs his/her first solution because of the context.

#### 4.5.1.1 Improved idiomaticity

In this sub-section, the examples show that the interpreter is repairing in order to improve the idiomaticity of the translation.

55. (TW 33/AL/Juxtaposed)

(...) and this training pro[gramme] has received huge interest from throughout Ireland

(...)	[et ce    notre programme <u>a attiré énormément d'intérêt</u>
	<i>and this our   programme   attracted considerable interest</i>

there    are a hundred places available on the pilot project and (...)

<u>a suscité beaucoup d'intérêt</u>	<b>il y a cent places (...)</b>
<i>gave rise to a lot of interest</i>	<i>there are 100 places...</i>

In this instance, the interpreter repairs the verb 'attiré' with 'suscité'. By repairing the first solution, the interpreter is improving the appropriateness of the utterance. This is what Levelt would call an AL repair where the speaker repairs from a less to a more precise term and repairs the appropriateness. Here, the interpreter is monitoring the collocation. Following the utterance of the first solution, the lexical item is allowed to go through the monitor and is checked for appropriateness. Once the interpreter realizes that the first utterance is not idiomatic in French, she decides to change it and repair with 'a suscité beaucoup d'intérêt'. In this instance, the interpreter's ear-voice-span is rather short and the interpreter is not lagging far behind the speaker. The reparandum and the reparatum are juxtaposed and the interpreter is not signalling to the audience that she is repairing. In the repaired utterance, the interpreter also changes the adverb from 'énormément' to 'beaucoup'.



It is also significant to notice that this instance of repair follows two other examples (see corpus available on CD-ROM).

In this case, however, the interpreter is attempting to reach improved relevance (Sperber and Wilson, 1986). The first utterance already had some contextual effect in this context. In other words, it was already relevant but the interpreter is trying to ease the processing effort by adding new information. By repairing the appropriateness, the interpreter is choosing a better explanation or a more standard collocation which will be easier to process. The receiver's processing costs are reduced because the utterance is more idiomatic but they are also increased because of the repair. The interpreter is strengthening and confirming a previously-held assumption without signalling it to the receiver. In her attempt to reach improved relevance, the interpreter is experiencing difficulties. This instance is preceded by two other repairs (see corpus available on CD-ROM for details). This shows that the interpreter's deployment of processing capacities has been heavily taxed. Moreover, the effort spent on the production of the repaired utterance (Gile, 1995a) hinders the interpreter who does not utter 'from throughout Ireland' (see above).

Although the first solution is not idiomatic in French, it is understandable. Therefore we can wonder why the interpreter deemed it necessary to repair. The repair is indeed improving the appropriateness of the utterance but could have been avoided. By repairing, the interpreter is lengthening her output and thus increasing both her own processing cost as well as the audience's. She is trying to find a balance between the two. Therefore, we could suggest that the interpreter is not only repairing for the audience or producing an output-generated repair, but is also repairing for herself and uttering what we called an interpreter-generated repair. Indeed, evidence shows that interpreters tend to repair although the repair might not be cost effective. They repair according to their own standard of what is acceptable.

The following examples are similar:

56. (TC 14/AL/Juxtaposed)



(...) From the private sector interconnection issue is e::: very important. The next is

(...) **Le point suivant** **il s'agit** **d'établir** **des liens entre**  
*The point next* *it is* *to establish* *links between*

[e::: cost recovering type policies e::: government  
**les [différents domaines. L'interconnection est fondamentale. Il s'agit également**  
*the different areas. The interconnection is crucial. It means also*

should establish e::: cost cost recovering type policy. This is something  
**d'établir e::: de mettre sur pied des politiques e::: tarifaires de recouvrement des**  
*to establish to set up policies of tariffs of recovering of*

quite e::: normal but sometime it was neglected in some in some cases.  
**coûts qui soient cohérentes.** **C'est un sujet (...)**  
*costs which are coherent. It's a subject...*

In this example, the interpreter is repairing the verb 'établir' (to establish) with 'mettre sur pied' (to set up) in an attempt to improve the idiomaticity. The reparandum could also have been a contamination from the input. The first solution would have been acceptable in French but instead, he decides to change and replace the verb. The interpreter has to deal with a very difficult input, which is taxing his processing capacities. He is trying to find a solution to the input 'cost recovering type policies' and while looking for a solution in French, he repairs the verb 'établir' and finds the output 'politiques tarifaires de recouvrement des coûts'. The hesitation 'e:::' between 'politiques' and 'tarifaires' is another element which indicates that the interpreter is searching for the better option, trying to minimize the effort and maximize the effect. In other words, he is seeking optimal relevance. This can also be seen when the interpreter decides not to repeat the cluster 'cost recovering policy'. The original speaker hesitates and adds that 'the government should establish cost cost recovering policy'. The interpreter repairs his utterance and decides to finish it by adding 'qui soient cohérentes'.

57. (TW 35/AL/Juxtaposed)

(...) we received over five hundred applications so you know



(...)

**et nous avons reçu plus de 500 demandes**  
*and we have received more than 500 applications*

we [think that there's a huge opportun there a huge opportunity to develop this type

**[Donc nous pensons qu'il c'est un secteur très porteur**  
*So we think that it, it is a sector very growing* **que nous**  
*that we*

of training and eh vocational type training.

**avons une bonne chance une bonne perspective e::: de formation.**  
*have a good chance a good perspective of training*

In this instance, the interpreter decides to improve on the first solution. She repairs 'chance' with 'perspective'. Here again the first solution would have been acceptable. The input itself contains repairs and therefore taxes the interpreter's deployment of processing capacities. The information contained in the input is highly relevant for the audience and both figures need to be rendered accurately (Gile, 1995b: 174-176). This, in turn, taxes the interpreter's production effort and causes other repairs (see corpus above). This instance follows example 55 (TW 33) analysed above.

58. (SS 15/AL/Juxtaposed)

(...) [Our main aims are to provide adequate basic pensions for all our citizens and

(...) **[d'une consultation vaste avec plusieurs parties intéressées( )**  
*of a consultation broad with several stakeholders*

second-tier income related pensions for those on higher earnings to enable them

**Notre but principal est de fournir des retraites de base appropriées pour tous**  
*Our aim main is to provide pensions basic appropriate for all*

maintain a reasonable relationship [with their pre-retirement standard of living

**nos citoyens** **et d'y** **un deuxième niveau un deuxième**  
*our citizens and to a second level a second*

The means to achieve these aims has to be an overall pensions system

**seuil de retraite en fonction des revenus.** **Les moyens pour réaliser ces objec**



*threshold of pension depending on incomes.      The means to realize these aims*

that is financially sustainable for an ageing population (...)

**tifs, c'est un système de retraite qui est soutenable financière cièrement pour une**  
*it's a system of pension which is sustainable financia-cially for a*

**population vieillissante (...)**  
*population ageing...*

In this instance, the interpreter repairs the lexical item 'niveau' with 'seuil'. The second solution is more idiomatic as it collocates with 'pensions/retirement'. By repairing the lexis, the interpreter omits a verb after 'd'y' (i.e. 'de y'). This shows that the interpreter's deployment of processing capacities has been heavily taxed. The collocation 'second-tier income related pensions' caused an overload for the interpreter who cannot retrieve the verb she was going to utter from her working memory. Moreover, the interpreter is not able to render another part of the original utterance, i.e. 'to enable them maintain a reasonable relationship with their pre-retirement standard of living'. Due to the difficulty encountered she also omits the adjective 'higher' in the original 'for those on higher earnings'.

59. (TW 1/AL/Juxtaposed)

(...) I feel very humble when I hear the credentials [and positions that other members

(...) **Je dois dire que [je suis tout à fait e::: je me sens**  
*I must say that I am entirely I feel*

other people in the room e::: hold but e::: I am very very happy to be here

**un peu humble...face à la présentation de tous les titres des autres intervenants**  
*a bit humble in front of the introduction of all the titles of the other speakers*

In this example, the interpreter utters 'je suis tout à fait' and repairs with 'je me sens'. There are several explanations for this repair. First, we can say that the reparandum is incomplete, in other words we do not know what the interpreter was going to say after 'je suis'. The interpreter spends search effort in trying to find an adjective to follow 'je suis'. Also, some adjectives would be syntagmatically appropriate after the verb 'être' but 'humble' would not



be because 'être humble' implies a permanent characteristic, not a temporary response. In her search, the interpreter fails to find an adjective and repairs to the syntagmatically appropriate 'je me sens humble'.

In section 4.5.1.1 on output-generated appropriateness repairs, we have seen that some examples improve the idiomaticity of the first solution: 55 (TW 33), 56 (TC 14), 57 (TW 1) others do not: 57 (TW 35) while another example improves the idiomaticity of the collocation: 58 (SS 15). All repairs are juxtaposed and the change is not signalled to the audience.

#### 4.5.1.2 Input interference

Interpreters also wish to give an alternative to their first solution. We will see that they do so because of some influence or contamination from the input. Indeed, if the interpreter is monitoring for the quality of his/her output, s/he may repair that output to improve the acceptability of it. The cause of the trouble may have been due to the input at the transfer stage.

60. (TW 45/AL/Juxtaposed)

(...) We're also looking at what possibilities that are actually create new work through

(...)	<b>mais nous</b>	<b>voilons</b>	<b>vouillons</b>	<b>voulons voir qu'elles sont les</b>
	<i>but we</i>			<i>want to see which are the</i>

teleworking and the council's meeting [and we will eh put together a report

<b>nouvelles possibilités de télétravail</b>	<b>[et donc quand ce comité se réunit il pourra</b>
<i>new possibilities of telework</i>	<i>and so when this committee meets, it will be able</i>

based on various scenarios for example one working group which I myself

<b>donc rédiger un rapport</b>	<b><u>sur la base de différents scénarios de différentes</u></b>
<i>so to draft a report</i>	<i>on the basis of different scenarios, of different</i>

am leading up is to	match supply and demand within the teleworking
---------------------	------------------------------------------------



**possibilités** par exemple un groupe de travail dont je suis l'animatrice essaiera de  
*possibilities for example a group of work which I facilitate will try to*

**faire (...)**  
*do (...)*

In this instance, the interpreter repairs 'scénarios' with 'possibilités'. She gives a second solution in an attempt to improve on the calque from the input. The first solution would have been acceptable but upon articulating the utterance, the interpreter realizes the contamination from the input and wishes to attend to it by repairing with another lexical item. The reparandum and the reparatum are again juxtaposed and the interpreter repeats the adjective 'différentes'. This does not explicitly signal the repair to the receiver. This example also follows another repair where the interpreter needs two attempts to reach the expected utterance (see corpus available on CD-ROM). This, in turn, taxes the interpreter's deployment of processing resources. This repair does not add much information for the audience and could have been avoided in an attempt to minimize the effort. Instead, the interpreter utters a redundant repair, which can also be described as an interpreter-generated repair.

The following examples are similar:

61. (SS 20 U/AL/Juxtaposed)

(...) [The reform process in Ireland also embraces the

(...) **Das bedeutet wir suchen ein [e::: finanziell ach nachhaltiges Lösung für**  
*This means we are looking for a financially sustainable solution for*

provision of health care a national anti-poverty strategy in operation for just one year

**unsere** **Vö-Bevölkerungsveralterung zu finden.** **Es gibt eine nationale**  
*our pop- population ageing to find. There is a national*

to address the major problem of social ex-exclusion and integrated policies to support

**Anti-Armutsstrategie**  
*anti- poverty strategy*

**die der sozialen Exklusionen ent-**  
*which the social exclusion counter*



families a final report from Ireland's Commission on the Family  
**gegenwirkt Ausschluß entgegenwirkt und integrierte Politik zur Familien-**  
*acts exclusion counteracts and integrated policy of the family*

is due to be completed (...)

**unterstützung (...)**  
*support ...*

62. (SL 7/AL/Juxtaposed)

(...) And of course [what what completes the formula is a simple ingredient that

(...) **[viel harte Arbeit durch Selbstvertrauen und ein hohes Mass an**  
*a lot of hard work through self-confidence and a huge amount of*

we like to call non-interference.

As president of the half-million

**Risikobereitschaft lässt sich dieser Erfolg erzielen. Und was diese Formel**  
*risk taking is possible this success to reach. And what this formula*

member organisation of small business owners I think I know from which I speak.

**dieses Rezept abrundet ist ein einfaches Motto nämlich die Nichteinmischung.**  
*this recipe rounds up, is a simple motto in other words the non-interference.*

63. (SS 37 M/AL/Indeterminate Signalled or Disguised)

(...) Emmm ultimately emmm the result of a reform [can be seen in the behaviour

(...) **offensichtlich. Letztendlich e::: [hängt das e::: Ergebnis einer**  
*obviously. At the end of the day depends the result of a*

emmm in the behaviour of the beneficits' recipients

**Reform am Verhalten der Leute es ist ablesbar dem Verhalten der**  
*reform from the behaviour of people it is readable the behaviour of the*

the behaviour of the functionaries and the behaviour of organisations



**Leistungsempfänger den Empfängern der Sachbearbeiter und dem Ver-Verhalten**  
*recipients of benefits    the recipients    of    officials                      and the behaviour*

but whether

the individual measures caused ...

**der Organisationen oder die Reaktion der Organisationen.(...)**

*the organisations    or    the reaction of the organisations...*

In example 61, the interpreter starts by uttering 'der sozialen Exklusionen' and repairs with 'Ausschluß'. She realizes that the lexical item is a contamination from the input and gives the alternative solution after having chosen the calque. The repair is juxtaposed but not detectable for the receiver. The interpreter links both solutions without any marker and simply repeats the verb 'entgegenwirkt'. This example follows another instance of repair in the interpreter's output (see corpus available on CD-ROM). This taxes the interpreter's processing capacities while she is trying to minimize her effort and maximize her result to achieve optimal relevance.

In example 62, the interpreter decides to repair 'Formel' (formula) with 'Rezept' (recipe), no doubt in an attempt to avoid using a calque from the original. In this repair, the interpreter does not link either of the two nouns with any conjunction. Instead, he simply changes the lexical item to another one. The original input uses the noun 'ingredient'. This repair might seem unnecessary but shows that the interpreter is looking for a better match, hence optimal relevance in his message.

In example 63, the interpreter repairs 'dem Verhalten' (the behaviour) with 'die Reaktion' (the reaction). The original speaker had used and repeated the lexical item 'behaviour' for each element (see co-text). The interpreter decides that 'Verhalten' is not appropriate in connection with 'organisation' and copies the original 'behaviour', hence he decides to repair with 'reaction'. He links both with the conjunction 'oder' (or) and therefore either disguises or signals the repair to the receiver, which is what we call an indeterminate repair. This instance of repair also follows part of the interpreter's output which has not been repaired (see corpus



available on CD-ROM). This, in turn taxes the interpreter's deployment of processing resources and causes the following hesitation in the interpreter's output and the repair.

Other examples are:

64. (HU 2/AL/Disguised)

(...) Dieses Modell wurde in der Absicht [entwickelt um sicherzustellen dass alle  
*This model was in the intention developed to guarantee that all*

(...) [This model was developed in order to

Probleme richtig eingeordnet und die Vorränge besser durchschaubar werden. Es war  
*problems properly classified and the priorities better transparent would be. It was*  
**guarantee that all these problems are properly arranged and**

eine gute Möglichkeit die absolut zentrale Stellung des Gründer-und Inhaber-  
*a good opportunity the absolutely central place of the founder and owner*

**integrated and priorities set.** It was indeed a very good possibility

unternehmers und seines oder ihres mit leitenden Ehepartners sichtbar zu machen (...)  
*entrepreneur and his or her with leading spouses visible to make*

**to emphasize the central position of the founder-owner and e::: his e::: (...)**

65. (HU 7/AL/Juxtaposed)

(...) Die jüngste Sozialenzyklika Centesimus Annus erst vor wenigen Wochen vom  
*The youngest Socialenzyklika Centesimus Annus, only a few weeks ago from*

(...) and I quote the thes the future of e::: mankind is e::: determined by the

Papst [ausdrücklich nicht nur an die Katoliken sondern an alle Menschen guten  
*Pope clearly not only to the catholics but rather to all people of good*

**fate of [the family unit. The most recent social encyci encyclica Centesimus Annus**



Willens gerichtet enthält ebenfalls wichtige Aussagen über die herausragende Bedeutung  
*will addressed, contains also important statements about the significant meaning*  
**e::: which e::: was published several weeks ago by e::: the Pope e::: is not only di-**  
 der Familie als Schoss in dem der Mensch die entscheidenden Anfangsgründe  
*of the family as basis in which man the significant beginnings*  
**rected e::: to catholics but is directed is addressed to all men of good will. E::: in the**

über die Wahrheit und das Gute lernt gewissermassen als Sitz der Kultur gegenüber  
*about the truth and the good learns, as it were as centre of culture compared*  
**statement e::: it emphasizes the overriding importance of the family as a center**

Another two examples are presented as Table 26.

Reference/Example	Original Input	Reparandum	Reparatum
66 (SL 3/AL/ Disguised)	to support	zu unterstützen <i>(to support)</i>	und zu ermutigen <i>(and to encourage)</i>
67 (HU 14/AL/ Indeterminate Signalled or Disguised)	Erziehung <i>(education/upbring ing)</i>	upbringing	or education

**Table 26:** *Examples of output-generated Appropriateness repairs (input interference)*

In section 4.5.1.2, we have seen that interpreters attempt to reach improved relevance by repairing the appropriateness of the message after realizing the interference from the input. All of these repairs can be described as mainly redundant and therefore, we can call them interpreter-generated repairs.

### 4.5.1.3 Added output

In the following sub-section, the interpreter repairs by adding some output.



68. (TW 7/AA/Juxtaposed)

(...) So, I'm executive offi[cer with Telework Ireland.

(...) [Je suis donc le responsable e::: du développement e::: du  
*I am so the responsible of the development of*

telework donc du télétravail en Irlande l'organisation qui s'appelle Telework  
*telework so of telework in Ireland the organisation which is called Telework*

Ireland.  
*Ireland*

In this example, the interpreter is repairing for ambiguity (AA). She uses the speaker's pause of around eight seconds to fit in as much as possible while she can see the speaker changing her slides for the purpose of the presentation. The cluster 'executive officer' caused a difficulty for the interpreter in other words it caused an overload of Gile's listening and analysis effort. This triggered a multiple repair mechanism. The interpreter decides to use 'responsable', a term which describes general duties before focusing on something more specific 'du développement'. The translation 'le responsable du développement' is not adequate in French. First of all, there is a gender mistake as the speaker is a woman. Secondly, the translation does not render the speaker's position within her company. It might be of some significance as the speaker had mentioned earlier: "I feel very humble when I hear the credentials and positions that other members (...) hold (...)" (see ).

Given the speaker's pause, the interpreter is trying to improve on her first translation by offering alternative formulations. She starts with a complete calque of the source language 'telework' and repairs it with its equivalent in the target language 'télétravail'. Then she realizes that the organisation for which the speaker works is more significant and repairs 'responsable du télétravail' with 'l'organisation qui s'appelle Telework Ireland'.

The interpreter thinks it is more important to give the name of the organisation, in other words 'Telework Ireland' rather than render what the speaker does. We could say that the interpreter is trying to find a better fit with what she perceives to be the communicative needs of the participants by seeking to strengthen previous assumptions. In other words, she is



searching for improved relevance but in her attempt to do so, she is increasing the difficulty for herself. This repair can be described as partly but not entirely redundant because of the context, and therefore can be qualified as interpreter-generated.

The following examples are similar:

69. (SS 12/AL/Disguised)

(...) One of our major concerns is [to avoid a situation whereby many of our young

(...) **[Un des plus grands soucis est d'éviter des situa-**  
*One of the major concerns is to avoid situations*

people have grown up in homes where the parents are unemployed and never have  
**tions où un nombre important de nos jeunes ont grandi dans un foyer où les parents**  
*where a number important of our young grew up in a home where parents*

experienced the reality of employment.

This has also

**n'ont jamais travaillé et n'ont jamais connu la réalité de l'embauche et d'une vie**  
*have never worked and have never known the reality of employment and of a life*

been a factor in extending the employment incentive measures to lone parents (...)

**professionnelle. C'est aussi un facteur pour l'extension des mesures d'incitation**  
*professional. This is also a factor for extending measures incentive*

**d'embauche (...)**  
*of employment*

70. (SL 6/AL/Disguised)

(...) The ongoing success of small business owners is not something

(...) **hier gar nicht sagen dass ich alle Herausforderungen kenne oder dass ich**  
*here absolutely not say that I all challenges know or that I*

however that's gonna be conjured up in someone's laboratory. There's no magic  
**Lösungsmöglichkeiten anzubieten hätte ich bin ja immerhin kein Hellseher aber**



*Solution possibilities to offer would have, I am after all no clairvoyant but*

involved. [I think there's really only dedication and hard work and

**der Erfolg von [kleinen Wirtschaftstreibenden ist auf keinen Fall etwas was man**  
*the success of small traders is on no account something that one*

there's only a high degree of self-confidence and a high degree of risk-taking. And  
**im Labor versuchen und experimentell durchführen kann. Nuch durch Engagement**  
*in a laboratory try and experimentally carry out can. Only through commitment*

of course what what completes the formula (...)

(...)

71. (SL 19/AL/Disguised)

(...) In addition we need to exchange ideas knowledge [and experience among

(...) **Darüber hinaus [müssen wir Meinungen**  
*Moreover must we opinions*

ourselves just as we have these last few days. From this exchange will come

**Know-How Erfahrungen und Wissen untereinander austauschen so wie das in**  
*know-how, experiences and knowledge among each other exchange like this*

the policies and positions we need (...)

**den letzten Tagen geschehen ist. (...)**

*in the last days happened...*

In example 69, the interpreter decides to improve on her first utterance by adding some information. She amalgamates 'unemployed/never have experienced the reality of employment' and renders it with 'n'ont jamais travaillé et n'ont jamais connu la réalité de l'embauche et d'une vie professionnelle'. The first part of the interpreter's output does not correspond to the original as 'unemployed' cannot be translated with 'n'ont jamais travaillé' (have never worked). The original input goes from something specific to a more general statement: 'the parents are unemployed and never have experienced the reality of



employment'. The speaker makes a short pause between this utterance and the next one. This enables the interpreter to add another element, which seems to be redundant in French as she links both with 'et': 'n'ont jamais connu la réalité de l'embauche et d'une vie professionnelle' and thereby disguises the repair to the audience. By adding more output, the interpreter seems to wish to compensate for the beginning of the utterance. She could well have stopped her utterance after 'embauche'. Instead she continues and adds a completely unnecessary utterance. The added translation only fills in the gap, which the original speaker left between two utterances. Moreover, the output is grammatically incorrect in French as it should be: 'n'ont jamais connu la réalité de l'embauche ni d'une vie professionnelle'. In her attempt to maximise the effect, the interpreter has not minimised the effort for the receiver.

In example 70, the interpreter decides to repair 'im Labor versuchen' (try in a laboratory) with 'experimentell durchführen kann' (can carry out experimentally). The first solution could be seen as acceptable and enough to understand the original utterance. Instead, the interpreter decides to add the second part of the utterance. He links both expressions and hence disguises the repair with 'und' (and). This addition of output seems completely redundant and therefore, in this example, the interpreter is increasing the difficulty for himself.

In example 71, the interpreter gives four lexical items to render three nouns in the original utterance. It looks like the interpreter is repairing 'know-how' with 'Erfahrungen', but it could be the repair of another lexical item from the list. The interpreter's deployment of processing capacities is taxed by the list of nouns in the input, i.e. 'ideas, knowledge and experience'. While the interpreter is processing the lexical item 'knowledge', his speech comprehension focuses on the beginning of the lexis and the interpreter utters 'know-how', which phonetically starts in the same way. The repair is disguised, therefore the receiver might not have detected it. Moreover, the repair is redundant.

Other examples are:

72. (SL 8/AL/Disguised)



(...) [They have expressed also their consternation regarding ideas and  
(...) **wieder zum Aus[druck gebracht dass sie besorgt sind über die negativen An-**  
*again to the expresion brought that they are concerned about the negative*

suggestions offered by often the chief executives of large busi-  
**reize gegenüber den Klein-und Mittelbetrieben. Diese negativen Anreize kommen**  
*incentives against the small and medium sized enterprises. These negative incentives come*

nesses seeking that special anomaly that we in the United States call the level  
**von der Regierung und man ist auch besorgt über bestimmte Vorstellungen die**  
*from the government and one is also concerned about specific ideas which*

playing field. My French colleague expressed e::: a need for more criticism  
**oft von Grossunternehmen und Konzernen kommen und man will die Anomalie**  
*often from large concerns and companies come and one will the anomaly*

in this area (...)

**der kleinen aus dem Weg räumen, (...)**  
*from the small get rid of (...)*

73. (SL 15/AL/Juxtaposed)

(...) We need to be innovative in order to resist any  
(...) **Wir brauchen Innovation**  
*We need innovation*

[undue interference of government in our operations and to guard (...)]

**[wir müssen kreativ sein um uns gegen die Einmischung der Regierung zu stehen**  
*we must creative be to ourselves the interference of the government to resist.*  
(...)

74. (SL 20/AL/Juxtaposed)

(...) It's in that vein that I conclude by inviting you to come [to Tennessee in the US  
(...) **[in diesem Sinn möchte**  
*in this sense would like*



for the international small business congress which will convene September twenty-  
**ich Sie einladen zum ICSB-Kongress e::: in die Vereinigten Staaten zu kommen**  
*I you to invite to the ICSB congress in the United States to come*

ninth of this year. For more information about that conference there's a number of e::  
**im September im Herbst dieses Jahres findet diese Konferenz statt und die**  
*in September in autumn of this year takes this conference place and the*

programs down here in front of me and I urge you to pick up a copy at the end (...)

**Information darüber finden Sie in den Programmen die hier aufliegen. (...)**  
*information about this find you in the programmes, which are lying here...*

75. (HU 13/AL/Juxtaposed)

(...) und [als Seele der Familie sieht er die Intin Intimität und die Erziehung... wobei er  
*and as soul of the family sees he the intim intimacy and the education while he*

(...) **[about the soul and the body of the family e:::as e::: the first e:::unit of**

unter Intimität bedingungsloses oder besser gesagt unbedingtes das heisst auch  
*under intimacy unconditional or better said absolute this means also*  
**society. And what does he consider the soul of the family? The intimac intimacy and**

von der Leistung unabhängiges Angenommensein versteht wo Vertrauen wo  
*from the performance independent assumption understand where confidence where*  
**the education. Now what does he mean by intimacy? That means an unconditional**

Sinngebung wo Freude Ordnung Glaube Hoffnung und Liebe besteht. Und Er-  
*meaning where joy order faith hope and love exist. And edu-*  
**e::: m::: acceptance that does not determine is not determined be::: or is not limited**

ziehung als zweites wesentliches Element ist ihm zuallerst eine Kunst die wie  
*cation as second significant element is him first an art which like*  
**by performance where confidence meaning pleasure enjoyment faith hope and**



jede Kunst auch der Inspirida Inspiration bedarf die es wiederum (...)  
any art also inspirida inspiration needs which is on the other hand  
love reign. And upbringing or education as the second element of the family (...)

In this particular instance, it seems easier to present the various lexical items of the input with their equivalent output in a tabular format.

INPUT	OUTPUT
Vertrauen	Confidence
Sinngebung	Meaning
Freude	Pleasure (repaired with) enjoyment
Ordnung	
Glaube	Faith
Hoffnung	Hope
Liebe	Love

**Table 27:** *Example 75 in a tabular format*

Further similar examples are: 76 (HU 15/AL/Juxtaposed), 77 (TC 8/AL/Indeterminate Signalled or Disguised), 78 (TC 9/AL/Juxtaposed) and 79 (TC 6/AL/Disguised).

While in section 4.5.1.1 we saw that interpreters were working with their own standard of acceptability, in this part we have seen that interpreters repair by adding some information. In their attempt to match the input, they add wholly redundant elements, therefore we can call these repairs interpreter-generated.

*4.5.1.4 Context dependency*

In the examples below, the interpreter is repairing his/her output because of the context of the original speaker's output. We will see that the interpreter repairs in a wish to improve the contextual effect of the translation for the receiver.



80. (TW 29/AC/Juxtaposed)

(...) we are actually training 100 people in conjunction with FÁS which is the

(...)

**Donc nous avons**  
*So we have*

government training agency [here in Ireland in teleworking and software localisation(...)]

**décidé en conjonction avec [l'agence pour l'emploi ici l'emploi et la formation (...)]**  
*decided in conjunction with the agency for employment, here, employment and training*

In this instance, the interpreter repairs 'l'agence pour l'emploi ici' with 'l'emploi et la formation'. With this repair, she is adding information, in other words, she is adding contextual effect for the receiver. The interpreter is making use of her world knowledge to render the acronym 'FÁS'. She also adds 'ici' (here) which tells the receiver that the organisation mentioned is located in Ireland. We can call this repair 'context-dependent' as the interpreter is adding information in the context of the conference and its subject matter. By repairing, the interpreter is improving the receiver's contextual environment.

In the similar examples presented below, the interpreter is also adding information in order to improve the contextual effect of the translation for the receiver:

81. (SS 3 U/AC/Juxtaposed)

(...) This has involved reducing social security contributions [for those on low pay

(...)]

**[Das reduziert Sozial**  
*This reduces social*

giving employers incentives to hire the unemployed and alleviating

**sicherheitsbeiträge für diejenigen in mit niedrigerem Einkommen gibt den**

*security contributions for those in with low income gives the*



poverty traps in the social security and tax systems especially for families with  
**Arbeitgeber Anreize e:::** **Arbeitslose Langzeitarbeitslose e:::**  
*employers incentives unemployed long-term unemployed*

children (...)  
**einzustellen (...)**  
*to employ...*

82. (TC 12/AC/Disguised)

(...) The wide participation [should be e::: essential. The third one is rules  
(...) **[Si le secteur privé est un::: invité il faut qu'il e::: puisse**  
*If the sector private is a guest it must be able*

for using e::: land in some cases was e::: the agreement was  
**bénéficier d'une participation sur un pied e::: d'équité et d'égalité.**  
*to benefit from a participation on a footing fair and equal.*

done that the private operator e::: just wanted to start construction  
**Les règles sur la propriété e::: foncière et l'aménagement du territoire**  
*Rules on property land and planning of territory*

Then they fa-faced great great problems with e:::  
**doivent être claires également lorsque la construction de certaines installations**  
*must be clear also when the construction of some facilities*

use of land

83. (TC 15/AC/Disguised)

(...) Finally e::: there is always there will always be disputes among  
(...) **un accès libre à ces informations sur e:::**  
*an access free to these information on*

private entities private carriers for just interconnection issues or [something but the the  
**enfin il peut se produire des litiges [entre les opérateurs**



*lastly there can be some disputes between operators*

*government e::: telecommunication authorities should make a:::*

**par exemple en matière d'interconnexion** **le gouvernement les pouvoirs publics et**  
*for example in terms of interconnection government authorities public and*

*a clear approach*

*appropriate role*

**les autorités compétentes en matière de télécommunication doivent**  
*authorities competent in terms of telecommunication must*

*for the solution; this is e::: very difficult to achieve (...)*

**adopter une démarche équitable et d'en assumer un rôle neutre (...)**  
*adopt an approach fair and for it ensure a role neutral...*

In example 81, the interpreter repairs 'Arbeitslose' (unemployed) with 'Langzeitarbeitslose' (long-term unemployed). Although this added information is not contained in the original input (unemployed), the interpreter deems it necessary to repair by adding this piece of information. In example 82, the interpreter repairs 'la propriété foncière' with 'l'aménagement du territoire'. Again here, the interpreter adds information for the receiver from the original input 'using land'. It is another example which shows us that the interpreter is wishing to improve the contextual effect for the receiver by strengthening a previously held assumption. The interpreter is using his world knowledge and repairs on the basis of the context. Finally in example 83, the interpreter repairs 'le gouvernement' with 'les pouvoirs publics'. As in the other two examples, the interpreter is adding some information, which is not in the original input. By adding 'les pouvoirs publics', the interpreter is improving the contextual effect for the listener by broadening the meaning of the utterance. In all three examples, the interpreter repairs in order to improve the contextual effect.

Further examples where the interpreter repairs by adding some information in order to improve the contextual effect on the receiver are: 84 (TC 18/AC/Juxtaposed), 85 (SL 10/AC/Disguised), 86 (SL 12/AC/Disguised) and 87 (TC 2/AC/Disguised).

#### *4.5.1.5 Conclusion*



In conclusion, we have seen that output-generated A-repairs can be subdivided into different categories: improved idiomaticity, input interference, added output and finally, context dependency. We have discovered that most of the repairs analysed, apart from the 'context-generated' ones, were wholly redundant and therefore could be included in a new category called 'interpreter-generated' repairs. These repairs could have been avoided by the interpreter as they only minimally improve the cognitive environment of the listener and are therefore not worth the additional costs involved, except for the interpreter whose internal standard of acceptability is presumably satisfied (Beaugrande and Dressler, 1981: 7).

Out of 33 repairs, a slight majority of 18 are juxtaposed, while a significant number (12) are disguised and three are indeterminate (Signalled or Disguised). This shows us that the interpreter is not signalling the change of choice to the audience by rather confirms and strengthens previous assumptions. Disguised examples show that the interpreter decides to hide the repair so that the receiver cannot detect it.

We have seen that the interpreter is repairing in an attempt to improve the relevance of the utterance. The interesting issue here is to wonder whether the repair is generating cost effectiveness or, in other words, whether the interpreter is maximizing the effect and minimizing the effort (Sperber and Wilson, 1986). By repairing, the interpreter is lengthening the output and thus adding new elements for the audience. In the examples above, we have seen that interpreters spend added processing effort in an attempt to reach improved relevance.

In section 4.5.1.4 called 'context dependency', we have seen that interpreters add some information in order to improve the contextual effect for the receiver. This category shows that interpreters repair their outputs using their world knowledge (see section 3.6.6), depending on the context of the conference and for the sake of the audience. Having said that, it is also interesting to look at the occurrence of interpreter-generated repairs, which shows us that interpreters do not only repair for the audience's sake. There seems to be a need to achieve improved idiomaticity at the cost of further output and cost effectiveness.



4.5.2 Post-articulatory E-repairs

In this section, we will look at output-generated error repairs. We will see whether or not the general assumption about error repairs, or the simple correction of an error, holds true in this corpus. Output-generated error repairs have been divided into repairs of grammatical markers and repairs of slips of the tongue. We will see the insights we can gain from the analysis of such repairs.

4.5.2.1 Grammatical marker

First of all, the corpus contains a certain number of repairs where the interpreter is attending the grammatical well-formedness of his/her output (see Blakemore, 1992: 40).

88. (TW 23/EG/Juxtaposed)

(...) but it certainly is not [should not be perceived as an easy option  
(...) [mais en c' on il n'faut surtout pas croire que  
but one should certainly not think that

in fact as a teleworker as I would reckon it's possibly a harder option than  
c'est une e::: un choix facile en fait en tant que télétravailleur je di-  
it is a choice easy in fact as teleworker I would

working in the office-based scenario.

rais que c'est une option beaucoup plus difficile que de travailler dans au bureau.  
say that it is an option much more difficult than to work in in the office.

89. (SS 5/EG/Juxtaposed)

A senior Commission official from DG 5 [Mrs Gabrielle Clotuche will also be chairing  
[Un officiel de laCommission Mme  
An official from the Commission Mrs

the panel discussion immediately after the conference's e::: e:::...the Commissioner's



<b>Gabrielle Clotuche</b>	<b><u>du e::: de la DG 5</u></b>	<b>sera présidente</b>	<b>d'une</b>
<i>Gabrielle Clotuche</i>	<i>of of the DG V</i>	<i>will be chair</i>	<i>of a</i>

address to the conference.

<b>discussion</b>	<b>de panel e::: suivant l'adresse de la Commission.</b>
<i>discussion</i>	<i>of panel following the address of the Commission.</i>

90. (SS 18 M/EG/Juxtaposed)

(...) I wish it continue success in the [years ahead in its very important work. I wish to

(...)	<b>Ich möchte [dem Verband weiter e:::</b>	<b>Erfolg wün-</b>
	<i>I would like the association further</i>	<i>success wish</i>

pay a special tribute in this regard (...)

**schen bei ihrer wichtig bei seiner wichtigen Arbeit (...)**  
*for its important for its important work...*

In example 88, the interpreter repairs the grammatical marker 'une' with 'un'. This example follows a number of difficulties, which had already triggered several repairs (see corpus available on CD-ROM). In this case, the interpreter's planner has chosen a feminine word but the monitor sends an alarm signal, the interpreter stops in mid flow and repairs with 'un'. The hesitation in the interpreter's output shows the listener that the interpreter is looking for an alternative.

In example 89, the interpreter starts with the article 'du' (masculine) and repairs with 'de la' (feminine). She realizes in mid flow that she is going to say 'DG 5' which in French is a feminine abbreviation from 'la Direction Générale'. Instead, she could have finished her utterance by saying 'du Directoire' but her monitoring function sends an alarm bell and while anticipating the acronym, she decides to repair the article and utters 'de la'. The reparatum and the reparandum are linked with a hesitation, which indicates to the listener that the interpreter is searching for a better solution.

In example 90, the interpreter again repairs a grammatical marker. In this instance, the interpreter repairs the feminine pronoun 'ihrer' with the masculine 'seiner'. He repeats parts



of the utterance 'bei ihrer wichtig' and repairs the grammatical marker for the benefit of the audience.

Similar examples are presented as Table 28.

Reference	Reparandum	Reparatum
91 (TW 9/EG/Juxtaposed)	certaines, cer	Certains membres
92 (TW21/EG/Juxtaposed)	à, à	au télétravailleur
93 (TW 24/EG/Juxtaposed)	Dans	au bureau
94 (TW 27/EG/Juxtaposed)	Une	un secteur
95 (SS 13/EG/Juxtaposed)	Cette	ce nouvel accent
96 (TC 17/EG/Juxtaposed)	Cet	ce principe
97 (SS 2M/ES/Juxtaposed)	Für	in den letzten zehn Jahren
98 (SS 13M/EG/Juxtaposed)	Des	der IVSS
99 (SS 20 M/EG/Juxtaposed)	Dieses	dieser Veranstaltung
100 (SS 21 M/EG/Juxtaposed)	Dem	die Unterstützung
101 (SS 22 M/EG/Juxtaposed)	an der	die, die Ansprache
102 (SS 26 M/EG/Juxtaposed)	Die	des, der Zuwachs
103 (SS 42 M/EG/Juxtaposed)	Reform von	Reform der sozialen Sicherung
104 (SS 2 U/EG/Juxtaposed)	In	mit niedrigerem Einkommen
105 (SS 14 U/EG/Juxtaposed)	Unser	Unsere Bevölkerungsalterung
106 (SL 2/EG/Juxtaposed)	in den	unter den Unternehmen
107 (SL 5/EG/Juxtaposed)	deren wir uns	denen wir uns
108 (SL 11/EG/Juxtaposed)	Die	das Ausmass
109 (SL 13/EG/Juxtaposed)	Der	des, der Einmischung
110 (SL 16/EG/Juxtaposed)	die unseren	unsere Stärken
111 (HU 4/EG/ Juxtaposed)	for nineteen	in nineteen ninety four



112 (MU 1/EG/Juxtaposed)	an den	an die Mitglieder
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**Table 28:** *Examples of output-generated Error repairs (grammatical acceptability)*

In this subsection, we have looked at examples where the interpreter is repairing a grammatical marker in order to attend to its well-formedness and correct some trouble in the output. The examples are quite numerous and are all juxtaposed. These instances show us that the uttered article or preposition is allowed to go through the monitoring loop either once or sometimes, as we have seen in the case of multiple repairs, twice, before being repaired to correspond to a grammatically-appropriate utterance. This shows that despite the difficulty of the simultaneous interpreting process, interpreters take the time to repair grammatical markers. This is an obvious attempt at improving acceptability (Beaugrande and Dressler, 1981: 7) and thus reducing processing effort for the receiver.

#### 4.5.2.2 *Slips of the tongue*

The second sub-category is slips of the tongue. As we will see, there are different types of slips.

113. (TW 13/ES/Signalled)

(...) We meet usually we meet by telephone conference...we meet we find we have to  
 (...) **Nous nous nous faisons des conférences par**  
*We we we do conferences by*

meet about once every two months approximately to keep face to face contact to discuss  
**téléphoniques e:::** **une fois tous les deux mois et et**  
*telephone once every two months and*

details of cof-of projects we might be working on to [discuss problems of fric  
**ensuite nous avons contact des contacts directs pour [discuter des projets que**  
*then we have contact contacts direct to discuss projects that*



tions that may have arisen

during the intervening period 'cause

**nous pouvons mett en pied sur en en place pardon**

*we can*

*set up sorry*

**en essayant**  
*trying to*

this can happen very easily and sometimes when you're not dealing (...)

**de résoudre le problème les conflits et les frictions (...)**

*solve the problem, conflicts and frictions...*

In this instance, the interpreter is experiencing several difficulties, which trigger a multiple repair mechanism. First, she utters 'nous pouvons mett en pied', then realizes that she did not utter the correct form, repairs with 'sur', then repairs with 'en' and finally repeats 'en' to repair with 'en place'. She did not repair the verb 'mettre' where she did not utter the end of the word ('re') but she does know that her output is incorrect and that the idiomatic expression in French is 'mettre en place' or 'mettre sur pied'. In this utterance, both expressions got mixed up and the interpreter's monitor is doing its work, even if slowly, to try to find the accepted version in French. The interpreter needs several attempts before she reaches the correct utterance. She realizes that the repair mechanism is rather long and laborious and apologizes with 'pardon' at the end of the repaired utterance. This is an obvious marker of the existence of repair/s for the audience.

The following examples are similar:

114. (TW 44/EL/Juxtaposed)

(...) So we're not looking only at the telecommuting scenario where people move their

(...)

job from Dublin [let's say for example to Galway or Connemara or Donegal whatever

**[Nous n'avons par exemple il ne s'agit pas de déplacer les personnes**

*We do not have for example it is not about moving people*

we're also looking at what possibilities that actually create new work through

**mais nous voilons vouillons voulons voir quelles sont les nou-**

*but we want*

*to see which are the new*







In this example, the interpreter repairs the slip 'point' with 'document'. This instance happens at the beginning of an intervention and we could suggest that the interpreter somehow, needs time to get started again. He realizes that the slip could cause confusion for the listener and hence decides to repair. The original input is extremely important as the speaker is explaining which document the participants are going to discuss. The interpreter is aware of this and knows that if he does not repair to give the correct information ('le document 1') it could have consequences for the rest of the message. In his attempt to reach optimal relevance, the interpreter not only repairs his slip but also adds more information, i.e. 'barre 3' which was not in the original input; so, in other words he adds some contextual effect. This type of information is vital for the smooth running of the session. It is not a simple error correction therefore, but goes beyond that and implies a wish on the interpreter's part to improve his own output for the benefit of the listener.

116. (TC 11/EL/Disguised)

(...) The second one is e::: legal framework for

private sector par

(...)

Ensuite

e::: il s'agit également d'établir le cadre

Then

it is about also to establish the framework

ticipation because

inves

investment

is a::: issue issue we invited e:::

juridique en favorisant la participation du secteur privé

legal by promoting the participation of the sector private

with a fair framework the wide participation [should be e::: essential.

The

[Si le secteur privé est un::: invité il faut

If the sector private is a guest it must

third one is rules for using e::: land

in some cases

qu'il e::: puisse bénéficier d'une participation sur un pied e::: d'équité

be able to benefit from the participation on a footing of equity

was e::: the agreement was done that the private operator e::: just wanted to (...)

et d'égalité.

Les règles sur la propriété e::: foncière (...)



In this instance, the interpreter is looking for the appropriate idiomatic expression in French and starts with 'équité' before finding the expression 'sur un pied d'égalité'. This example shows that the interpreter's deployment of processing capacities has been hampered. It is worth noting that this slip occurs in the context of a problematic input (i.e. the original speaker has a strong Japanese accent). The monitoring function still sends the alarm signal and the interpreter repairs. The reparandum and reparatum are linked with the conjunction 'et' used as an editing term in this instance. This disguises the repair to the receiver.

Similar examples are:

Examples	Input	Reparandum	Reparatum
117 (SS 9/ EG/Juxtaposed)	of the social security system	de le	des systèmes de sécurité sociale
118 (HU 6/ EF/Juxtaposed)	Sozialenzyklika Centesimus Annus	social encyci	encyclica Centesimus Annus
119 (HU 1/ EG/Juxtaposed)	are family business really different?	as	are family business really different
120 (HU 9/ ES/Juxtaposed	er hielt einen Vortrag	had a	held a lecture
121 (HU 19/ EL/Juxtaposed)	so meint der Spanier	he said that we had	we need
122 (TW 12/ ES/Juxtaposed)	we have contact	nous avons contact	des contacts
123 (SS 40 M/ EL/Juxtaposed)	intended and unintended ways	auf intend	beabsichtiger und unbeabsichtiger- weise
124 (SS 25 U/ EL/Juxtaposed)	for your cheerful welcome	für sein wunderbare welcom	willkommen
125 (MU 4/	the team of the	das Team der I.DE	des DI.DE.A Design



EL/Juxtaposed)	I.D.E.A. Design Centre		Centers
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**Table 29:** *Examples of output-generated Error repairs (slips of the tongue)*

In this subsection, we have seen that interpreters repair their slips of the tongue at the risk of having to deploy further processing capacities. In some instances, the first solution is allowed to go through the monitor a second time in an attempt to reach optimal appropriateness for the receiver: see examples 113 (TW 13) and 114 (TW 44). In examples 122 (TW 12), 123 (SS 40 M), 124 (SS 25 U) and 125 (MU 4) the slip of the tongue was influenced by the original input or, in other words, the interpreter starts by uttering a slip, which is contaminated by the input and decides to repair.

4.5.2.3 Conclusion

In conclusion, the category of output-generated Error repairs tells us that interpreters do monitor their output for possible trouble and correct errors but the Error repairs also go beyond this. We have seen that the trouble can be detected and simply repaired or that the second solution can go through the monitoring loop a second time and give rise to a so-called multiple repair mechanism (see 3.6.6). Interpreters repair either a grammatical marker or a slip of the tongue. The slips can either be simple or arise from the original input while the grammatical trouble stems from an erroneous selection of grammatical markers. Slips of the tongue have been a source of much research carried out by scholars who wanted to find out more about speakers' language production. For example, Hockett (1973) attempted to further Freud's work in order to understand the occurrence of slips. He was the first one to formalize the use of overt versus covert editing by looking at various blends and slips of the tongue. Laver studied slips of the tongue in order to find out more about the "functional properties of the brain's control of speech" (Laver, 1973: 132). In other words, slips of the tongue can be a valuable tool to shed light on other aspects of speech production (see also Fromkin, 1973; Cutler, 1982; Motley *et al.*, 1983).



In our corpus, out of a total of 38 instances presented above, a vast majority of 36 are juxtaposed, while one repair is signalled and one is disguised. This shows a propensity to immediately repair slips and other trouble without signalling such to the receiver. Generally, we have seen that interpreters take the time to repair a grammatical marker or a slip of the tongue, at the risk of overloading their listening and analysis or memory effort. Interpreters repair 'errors' for the sake of the receiver and not only to correct a mistake, see example 115 (TC 1).

4.5.3 *Post-articulatory D-repairs*

In this section, we will look at Different repairs (D-repairs) where the interpreter starts with an utterance, stops and repairs by changing the word order or the direction of the utterance. We will see how interpreters abandon their first solution in order to achieve completion or abandon their first alternative in order to go backward and change the construction.

4.5.3.1 *Reaching completion*

In this first sub-division, the interpreter is abandoning the first uttered solution in order to reach completion.

126. (SS 2/Juxtaposed)

(...) And coming in this morning I saw [great structures outside and I was wondering

(...)	[Moi-même	j'ai	vu e:::...	les
	Myself	I	saw	the

was this part of the conference but I'm told e::: they weren't putting up e::: these stages

**échaffaudages**  
*scaffolding*

**dans la cour du château et on c'est**  
*in the yard of the castle and one, it is*

they were actually taking them down from last night because there was a rock concert(...)

<b>en fin de compte on démontait une scène puisque un concert (...)</b>
<i>actually one was taking down a stage because a concert...</i>



In this instance, the interpreter starts with the pronoun 'on', repairs it with 'c'est' and then reverts back to the pronoun 'on' but utters 'en fin de compte' as an introduction to her final repair. The reparandum goes through the monitor a first time and the reparatum goes through it again before the second reparatum 'en fin de compte on démontait' is articulated. This is what we call a multiple repair mechanism. This shows that the interpreter abandons her first solution in order to complete her utterance. The fact that she needs two attempts to reach completion also shows the wish to reach improved relevance for the receiver. In an attempt to minimize the processing cost and at the same time maximize the effect, the interpreter decides to repair the direction of the utterance in order to be able to finish it. The repair is juxtaposed and is, therefore, not signalled to the receiver.

This instance occurs at the beginning of a government minister's speech where the interpreter has the speech in the booth. Before starting his speech, the minister introduces the subject by talking about the weather, welcoming the participants and mentioning the 'structures' outside Dublin Castle where the conference is taking place. The interpreter renders this idea of 'structures' with the more specific term of 'échaffaudages' (scaffolding). This shows that the interpreter is drawing on contextual knowledge of the conference's location.

The following examples are similar:

127. (SS 15 M/ Juxtaposed)

(...) My department cele[brated last year its 50<sup>th</sup> anniversary and it

(...) **[Mein Ministerium auf der anderen Seite hat im letzten Jahr**  
*My ministry on the other hand has in the last year*

it was proud to have been a member of the ISSA e::: for

**den im sein 50 jähriges Bestehen begangen und e::: wir sind sehr stolz darauf**  
*the in its 50<sup>th</sup> year of existence celebrated and we are very proud*

that period. (...)



**Mitglied des IVSS (...)**  
*member of the ISSA...*

128. (TC 16/Juxtaposed)

(...) this is e::: very difficult to achieve as  
(...) **et d'en assumer un rôle neutre en ce qui concerne la résolution**  
*and to take a role neutral regarding the resolution*  
I said [I am not an Apec man but having hosted this se-  
**des lititges [c'est très important comme je l'ai dit tout à l'heure je::: ne**  
*of disputes it is very important as I have said a moment ago I do*  
minar the result was very e::: fruitful through the::: frank discussion

**représente pas l'Apec mais comme e::: nous avons comme le séminaire en fait e:::**  
*represent not Apec but as we have as the seminar in fact*

the spread??? e::: speak out the private sector and the government e::: was air???

**s'est obtenu sous nos auspices je peux**  
*was obtained under our auspices I can*

to understand each e::: feeling that the the reality of the investment process.  
**dire que cette réunion qui a rassemblé e::: représentants**  
*say that this meeting which has brought together the representatives*

I hope this could be some food for thought for this meeting. Thank you  
**des pouvoirs publics et du secteur privé a été très utile pour**  
*of powers public and of sector private has been very useful for*

very much Mr. Chairman (...)  
**une meilleure compréhension mutuelle. (...)**  
*a better understanding of each other...*

129. (TW 39/Juxtaposed)



One of our functions which we took on over the last year and with very successes is  
(...)

**Une des fonctions que nous**  
*One of the functions that we*

is to really get down to some serious [political lobbying and we really have the  
**avons décidé d'entreprendre [c'est en fait de faire des activités de de**  
*have decided to take on it's actually to do activities of of*

issues which will build an obstacle to teleworking addressed (...)

**lobby politique pour que essayer pour essayer donc de discuter des problèmes du**  
*political lobbying so that try to try so to discuss problems of*

**télétravail (...)**  
*telework*

In example 127, the interpreter utters 'im letzten Jahr den' repairs with 'im' and repairs again with 'sein 50 jähriges Bestehen'. As in example 126 (SS 2), the reparandum is allowed through the monitor and the reparatum is also repaired to produce a third alternative. This multiple repair mechanism shows us that the interpreter, while experiencing difficulties in the production of an output, wishes to complete his utterance at a minimum cost.

In example 128, the interpreter hesitates, utters 'comme e::: nous avons', repeats 'comme' and changes the direction by repairing with 'le séminaire en fait e::: s'est obtenu sous nos auspices'. By repairing with this utterance, the interpreter uses an awkward syntax with a passive construction in French. He hesitates and is looking for the best possible way to express the verb 'to host'. The hesitations show that the interpreter's deployment of processing capacities is heavily taxed. In an attempt to reach completion at a minimum cost, the interpreter decides to repair and change the direction.

In example 129, the interpreter repairs 'pour que' with 'essayer', then the reparatum is allowed through the monitor a second time and is repaired with 'pour essayer donc de'. The interpreter decides to change the direction in order to reach completion. The input contains a syntactic overload where the verb comes at the end ('issues which will build an obstacle to teleworking addressed'). This probably taxed the interpreter's deployment of processing



capacities who starts the utterance with the inappropriate verb 'entreprendre'. She does not repair it and leaves out two pieces of information, i.e. the time: 'over the last year' and the result 'with very successes'. The subject of 'lobbying' had been mentioned earlier but seems to trigger a hesitation in the output. The use of 'pour que' implies a change of subject from 'nous' to someone else. The repair seems to be an easier way to finish the sentence in French. The change of direction makes it possible for the interpreter to avoid a subjunctive in French and to avoid having to spend more effort on the end of the sentence while still waiting for the verb in the original utterance. The phrase 'the issues, which will build an obstacle to teleworking' is rendered with 'les problèmes du télétravail'. The interpreter seems to have spent much of her effort on the listening and analysis but not on the production. The translation is therefore a general summary of the original where the idea of future difficulties ('will build') is lost.

Other examples are:

130. (TW 3/Juxtaposed)

(...) to [learn about your views on telework and the use of technology

(...) **[contente d'être ici puisque je je j'ai l'intention d'apprendre beaucoup de**  
*happy to be here because I I I wish to learn a lot to*

to develop new systems of work maybe new e::: constructions

**savoir quel est votre ... e:::... opinion concernant les nouveaux systèmes de travail**  
*know what is your opinion relating to the new systems of work*

in society that are based around these new spectra of work so hopefully I'll be I'll

**etc... et il se peut qu'il de nouvelles sociétés soient construites sur**  
*etc... and it is possible that it, that new companies be built on*

able to deliver some information to you (...)

**la sur la base de ces nouvelles méthodes (...)**  
*the on the basis of these new methods (...)*

131. (SS 3 M/Juxtaposed)



(...) He's been a member of the Parliament over for the last ten years and was previously

(...) **Er ist der Mitglied des Parlaments für e::: in den letzten zehn**  
*He is the member of parliament for in the last 10*

minister at the Prime Minister's e::: o office and also the Department of Defence and

**Jahren war vorher ein Minister e::: im Präsidialamt und**  
*years was before a minister in presidential authority and*

Government Chief Whip. He was a member of the British-Irish parliamentary [body

**war ebenso im Verteidigungsminister tätig** [Er war  
*was likewise in the defence ministry active* He was

since 1991 and co-chairman since 1993 at the time he became minister (...)

**im in der in so eine irische-englischen e:::Parlamentarier Gruppe tätig und (...)**  
*in in the in so an Irish english parliamentarians group active and (...)*

132. (SS 11/Juxtaposed)

(...) [Our most serious problem has been unemployment which has included a high

(...) [**Dans mon propre pays en Ir en Irlande la réforme de le des systèmes de sé**  
*In my own country in Ir in Ireland the reform of the the systems of*

level of long term unemployment.

We

**curité sociale est également une priorité importante pour la politique publique.**  
*security social is also a priority important for the policy public.*

have tackled this in the first instance by endeavouring to make the social securiyy

**Notre pru problème le plus grave bien sûr est celui du chômage**  
*Our pru-problem the most serious of course is the one of unemployment*

system more employment friendly. This has involved reducing social security

e::: **c'est et également une une proportion très importante de chômage de lon-**  
*it is and also a a part very important of unemployment*

contributions for those on low pay (...)

gue durnée. (...)







couple of days. Some of you have been here earlier we had some good weather in

**ten Tage wenn Sie schon hier waren genossen**

*days if you already here were enjoyed*

**wir hatten**

*we had*

Ireland but e:::unfortunately the weather is to turn today...

**gutes Wetter in den letzten Tagen aber leider Gottes der hat das e:::ist das gute**

*good weather in the last days but unfortunately the has the is the good*

somebody said when I came in(...)

**Wetter vorbei heute (...)**

*weather over, today...*

In this instance, the interpreter starts by uttering the grammatical marker 'der', repairs with the verbal form 'hat das', then hesitates before repairing with 'ist das gute Wetter vorbei'. The interpreter needs two attempts before reaching completion. This shows that the interpreter is experiencing difficulties in the production of his output. In an attempt to reach completion for the receiver, the interpreter goes back and repairs twice. In other words, the reparandum goes through the monitor once, the interpreter then utters the reparatum, which then goes through the monitor a second time.

The following examples are similar:

137. (SS 36 M/Juxtaposed)

(...) Yes thank you for the question. E:::

[it is very difficult to answer

(...)

**Vielen Dank für Ihre [Frage. Es ist sehr schwierig**

*Many thanks for your question. It is very difficult*

obviously.

Em::: ultimately emmm the result of a reform can be seen

**darauf zu antworten e::: offensichtlich.**

*to answer*

*obviously.*

**Letztendlich**

*At the end of the day*

**e::: hängt das**

*depends the*

in the behaviour em:::

in the behaviour of the beneficiaries' recipients

**e::: Ergebnis einer Reform am Verhalten der Leute es ist ablesbar dem Verhalten**

*result of a reform on the behaviour of the people it is readable the behaviour*



the behaviour of the                      functionaries and the behaviour of organisations  
**der Leistungsempfängern den Empfängern der Sachbearbeiter und dem Ver-**  
*of the service beneficiaries the beneficiaries of the functionaries and the be-*

but whether                                              the individual (...)  
**Verhalten der Organisationen oder die Reaktion der Organisationen (...)**  
*behaviours of organisations or the reaction of organisations (...)*

138. (SS 34 M/Juxtaposed)

(...) Our first speaker so is Francis Kes[sler from the Institute of of Labour Law in

(...)                                              **[Unser erster e::: Sprecher hier ist Francis**  
*Our first speaker here is Francis*

the university of Robert Shuman in France.                      Mr.Kessler is a leading expert (...)

**Kessler Professor im Institut der Arbeit der an der Universität Robert Schuman in**  
*Kessler professor in the institute of labour the of the university Robert Schuman in*

**Strasburg / (...)**  
*Strasbourg (...)*

139. (SS 29 M/Juxtaposed)

(...) Thank you [Mr. Sher-Chair-Sherman e::: for giving us such a clear orientation and

(...)                      **[Vielen Dank Herr Sherman                      für diese klare**  
*Many thanks Mr. Sherman                      for this clear*

purpose of the regional meeting      and what we'll be focusing on over the next few days.

**Orientierung des e::: über den Zweck unserer Arbeit      und**  
*orientation of the about the purpose of our work      and*

Ladies and gentlemen that concludes the opening session e:::      I would  
**worauf wir uns konzentrieren sollen in den nächsten Tagen damit e::: kommt**  
*on what we ourselves concentrate should in the next days with this comes*



like to join Mr. Sherman and minister Ahern in wishing you a successful  
**unsere Öffnungssitzung e::: zum Schluß. Ich möchte mich e::: den e::: Herrn**  
*our opening session to an end. I would like myself the Mr.*

conference and an enjoyable stay in Dublin (...)

**Sherman und e::: Herrn Ahern anschließen (...)**  
*Sherman and Mr. Ahern join (...)*

In example 137, there are two ways to describe the repair. It can either be a repair from the verbal form 'hängt' to 'es ist ablesbar' or we can also say that the interpreter is changing direction when he starts again with 'am Verhalten der Leute es ist ablesbar'. This repair is used in order to reach completion and minimize the processing cost both for the interpreter and the receiver. This repair is juxtaposed and difficult to detect for the audience.

In example 138, the interpreter utters 'Professor im Institut der Arbeit der' and repairs with 'an der Universität Robert Schuman'. The interpreter's deployment of processing capacities is taxed by the input, which contains several names. The interpreter is coping with the introduction of the next speaker and more specifically the title and functions of that person. The interpreter is looking for a translation of 'labour law' and utters 'Arbeit' (labour). After saying this, he realizes that the information is not complete, goes back and changes the direction in an attempt to maximize the effect and minimize the effort. It is also interesting to note that the interpreter uses his contextual knowledge when he couples 'France' with 'Strasbourg' where the university is located.

In example 139, the interpreter starts by uttering 'für diese klare Orientierung des', hesitates and repairs with 'über den Zweck'. The second alternative gives the interpreter the opportunity to reach completion of his utterance. He is changing the meaning of the original input by using 'über' (about) instead of the conjunction 'and' but minimizes the processing cost by reaching completion.

#### 4.5.3.3 Conclusion



In this section on Different repairs, we have seen that interpreters repair by changing the word order. According to Levelt (1983: 51, italics in original), D-repairs can be found where "the current message is replaced by a *different* one". Interpreters either repair in order to reach completion: examples 126 (SS 2), 127 (SS 15 M), 128 (TC 16), 129 (TW 39), 130 (TW 3), 131 (SS 3 M), 132 (SS 11), 133 (SS 13 U), 134 (MU 4), 135 (SS 9 M) or they do a retrospective completion: examples 136 (SS 4 M), 137 (SS 36 M), 138 (SS 34 M) and 139 (SS 29 M). The examples of D-repairs might not necessarily improve the contextual effect for the receiver but they give the interpreter an opportunity to complete his/her utterance, and even more importantly, move on with the rest of the input. The concomitant activities involved in simultaneous interpreting mean that the interpreter faces added pressure if trouble arises. S/he needs to take a quick decision either to repair (as in the examples above) or not. We have seen ample evidence, which tells us that interpreters do decide to repair and change the direction of their utterance. Not only do they repair but in some instances, the reparandum is allowed twice through the monitoring loop in examples 126 (SS 2), 127 (SS 15 M), 129 (TW 39), 131 (SS 3 M), 135 (SS 9 M) and 136 (SS 4 M). This can be due to the fact that the interpreter's deployment of processing capacities is heavily taxed but can also mean that the interpreter is spending more effort and processing cost on the production of the repair in order to maximize the effect of the new utterance. All examples of D-repairs are juxtaposed. This shows us that the interpreter is not signalling the repair to the receiver.

Another interesting aspect is the fact that interpreters look backward at an utterance which they could not finish and repair by changing the direction in order to complete the utterance. In other words, this is something new for the simultaneous interpreting process which is generally perceived as forward looking, as opposed to consecutive interpreting, which is regarded as a backward looking process (for more details, see 4.5.5).

#### 4.5.4 Mid-Articulatory repairs

In this section we will look at the occurrence of Mid-Articulatory repairs. Levelt, in his study, had a category of so-called 'covert repairs', or repairs which happen at a pre-articulatory stage. As we have seen earlier (see 2.5), it seems difficult to prove the existence



of a pre-articulatory repair without having access to the inside of the interpreter's black box. In the case of covert repairs, Levelt (1989: 55) himself found it "almost impossible to determine what the speaker is monitoring for". In the corpus analysed below, we will see that the interpreter utters parts of the word before stopping in mid-flow, going back and repairing. Because the utterance is not completed, we will talk of Mid-Articulatory repairs. This section is different from section 4.4.4 as interpreters are repairing their output in mid-flow, therefore we can talk of Output-generated Mid-Articulatory repairs. This is further evidence of live monitoring during simultaneous interpreting. The corpus has been subdivided into repairs for acceptability, repairs for completion, slips of the tongue and hesitations.

#### 4.5.4.1 Acceptability

First, we will look at instances interpreters repair in order to improve the acceptability of their translation.

140. (TW 30/Juxtaposed)

(...) so this means that people who are living in peripheral areas on the islands of

**(...) plupart du temps sur l'Internet.**

*most of the time on the Internet.*

**Donc pour ceux d'entre**

*So for those among*

the West of Ireland, for example

[in Donegal

**eux qui sont enfermés et qui vivent dans des régions périphériques [de l'Irlande**

*them who are locked up and who live in regions peripheral of Ireland*

or in Kerry which is the south-west of Ireland are not denied

the opportu-

**dans le Donegal ou dans le comté de Kerry qui est dans le sud-ouest de l'Irlande**

*in Donegal or in the county of Kerry which is in the south-west of Ireland*

nity of taking this training simply because of the fact that they are not physically

**ne se verront pas donc refuser e:::ces op- possibilités**

**de**

**formation**

*will not be so refused these opp-possibilities*

*of*

*training*



present in a major urban centre (...)

**du fait qu'ils ne peuvent pas être physiquement présents dans un centre urbain (...)**  
*for the fact that they can't be physically present in a centre urban...*

In this example, the interpreter starts uttering 'op-' and repairs with 'possibilités'. It is likely that the first part of the utterance was going to be 'opportunités'. This lexical item can have two meanings in French, one defines an event or something adequate or appropriate and the second meaning, although criticized, comes directly from the English word 'opportunity'. The interpreter is probably conscious of the possible 'calque' and decides to repair with 'possibilités'. In other words, she anticipates the contamination from the input. It is interesting to note that the interpreter could have uttered 'opportunité'. The decision to repair is improving the acceptability but is also increasing her processing load.

The following examples are similar:

141. (SS 14 M/Juxtaposed)

(...) The ISSA now in existence for [over 70 years and from an initial 9 members in

(...) **[Des der IVSS besteht seit über 70 Jahren und**  
*The the ISSA is in existence for more than 70 years and*

1927 has grown today to 340 members organisations

**von ursprünglich 9 Mitgliedern in 19 im Jahre 1927 gibt es heute 340 Mit-**  
*from originally 9 members in 19 in the year 1927 there is today 340 member*

in some 130 countries (...)

**gliedsorganisationen in etwa 130 Ländern (...)**  
*organisations in around 130 countries...*

142. (SS 6/Juxtaposed)

(...) [the growth in unemployment particularly long term unemployment e:::

(...) [**englobe la croissance du chômage notamment le chômage de**  
*encompasses the growth of unemployment especially the unemployment of*



ageing of population                      the need to control health costs and at  
**longue durée le vieillissement de la population**                      **le besoin de contrôler**  
*long term                      ageing                      of population                      the need to control*

the same time      improve the quality of care      changing family structures and  
**les dépenses de santé mais en même temps améliorer la qualité des soins**  
*spending of health but at the same time improving quality of care*

growing social exclusion.                      These trends have been giving rise to major  
**des f structures familiales changeantes et une exclusion sociale approfondissante**  
*f- structures family changing and an exclusion social deepening*  
 (...)

increases(...)

143. (TW 6/Juxtaposed)

(...) based on my own                      experience and that of  
 (...) **travail dont je j'espère bien pouvoir vous vous donner de nouvelles**  
*work which I I hope do being able you you to give new*

teleworking      [community as it were in Ireland                      but also I would      hope  
**informations[con sur la base de mon expérience sur la communauté des**  
*information                      on the basis of my experience                      on the community of*

during discussion that (...)  
**télétravailleurs en Irlande et donc (...)**  
*teleworkers                      in Ireland and so ...*

In example 141, the interpreter starts by uttering 'in neunzehn', stops in mid-flow and repairs with 'im Jahre neunzehnhundertsiebenundzwanzig' (1927). He realizes in mid-flow that he is copying the original input and decides to repair. The interpreter's deployment of processing capacities has been heavily taxed with the acronym 'ISSA' and several figures contained in the original input (see co-text above). If the interpreter had not uttered 'in', he could have



said '1927' in German. Instead, he has to stop in mid-flow and go back to add 'im Jahre (...)'. In an attempt to achieve an acceptable output, the interpreter has to deploy more processing resources.

The example 142 is typical of a mid-articulatory repair where the interpreter was most probably going to utter 'familiale' or 'famille' and repaired to say 'structures familiales'. The interpreter repairs because of her first contaminated choice, i.e. the grammatical structure of the input ('family structure'). The repair is generated by knowledge of what is acceptable in the target language and the interpreter seems to be influenced by it. Due to a difficulty in the deployment of processing capacity, or in her production effort, and in an attempt to reach acceptability for the audience, the interpreter repairs the 'f' with 'structures familiales'.

In example 143, the interpreter starts by uttering 'con', stops in mid-flow and repairs with 'sur la base de'. It looks like she was going to say 'concernant' but instead stopped in mid-flow and repaired to utter 'sur la base de'. Another added difficulty is the lexical item 'community' in the original input. Given that the interpreter's ear-voice-span is rather short, it is possible that the original input had an influence on the interpreter's output. The interpreter decides to repair in an attempt to reach acceptability (Beaugrande and Dressler, 1981: 7) and minimize the effort.

The following examples are similar and are presented as Table 31.

Examples	Input words	Reparatum (i.e. repair)	Probable Reparandum
144 (TW42/ Juxtaposed)	Opportunities	op-, <u>possibilités</u>	Opportunités
145 (TW 28/ Juxtaposed)	Represents	est rep - <u>est</u> <u>un</u> <u>potentiel</u>	est représentatif
146 (TW 10/ Juxtaposed)	<ul style="list-style-type: none"><li>• sort of</li><li>• scenario</li></ul>	s-travaillent un s-contexte	sorte... scénario...
147 (TW 31/	we like to	nous aim- nous	nous aimons



Juxtaposed)		essayons	
148 (SS 6 M/ Juxtaposed)	from countries outside Europe	aus- aus-außer europäischen	außerhalb...
149 ( SS 4 U/ Juxtaposed)	Families	f- es gibt außerdem	Familien...
150 (TW 36/ Juxtaposed)	that (organisation)	de cette orga- à cette association	Organisation

**Table 31:** *Examples of output-generated Mid-Articulatory repairs (acceptability)*

In this subcategory we have found that all examples are juxtaposed. The interpreter is not only repairing for basic acceptability but is also looking for improved acceptability (for example in the case of examples 139 (TW 30), 143 (TW 42) and 144 (TW 28). This repair in mid-flow allows interpreters to reach completion of their utterances but it also means that interpreters need to deploy further processing resources at the risk of increasing the effort spent on the rest of their output.

4.5.4.2 Completion

In the following sub-section, we will see that the interpreter is repairing in order to be able to complete his/her utterance.

151. (TW 20/Juxtaposed)

(...) And people sometimes have a very very wrong idea of what teleworking is they

(...)

**Et parfois e:::**

**les gens ont une**

*And sometimes people have an*

think that just because they have a computer at home that suddenly and sorry and

**idée erronée de**

**c'qu'est le télétravail ils pensent**

**qu'il s'agit simplement**

*idea erroneous of what is telework they think that it is about simply*



time on their hands some time on their hands maybe when children are at  
**d'avoir un ordinateur à la maison et aussi du temps** **c'est-à-dire quand les enfants**  
*to have a computer at home and also time which means when children*

school or something that suddenly they [can begin to make money for themselves which  
**sont à la maison** **et [ ils se disent que peut-être qu'ils essay qu'ils**  
*are at home and they tell themselves that perhaps they try they*

won't really interfere with their works their lifestyle very much but they'd just  
**pourront avoir un revenu et que ils pourront donc l'insérer prati sans pro**  
*will be able to have an income and that they will be able to insert it pract- without pro-*

be a sort of a handy little income well I can tell them as a teleworker myself that (...)

**blème** **dans leurs vies** **e:::** **et je peux vous (...)**  
*blems in their lives and I can you*

In this instance, the interpreter starts by uttering 'prati' and stops in mid-flow before repairing with 'sans problème'. This is a typical example of a Mid-Articulatory repair where the interpreter realizes in mid-word that she wishes to change the word and repairs with a second choice. The part of the word 'prati', which has been uttered is picked up by the monitor and checked against the interpreter's conceptualizer. In this case, an alarm signal is sent and the utterance (or part of it) is repaired. We can only hypothesize that the probable reparandum would have been 'pratiquement'. In an attempt to avoid further complications and minimize the effort, the interpreter repairs in mid-utterance. This example is juxtaposed.

The following examples are similar:

152. (TW 40/Juxtaposed)

(...) in having the National Advisory Coun[cil] on teleworking established now the  
 (...) **[à mettre sur pied donc, un conseil de:::**  
*to set up so a council of*

remit of the national advisory council on teleworking (...)



**un comité consultatif national sur le télétravail (...)**  
*a committee advisory national on telework*

153. (SS 19 U/Juxtaposed)

(...)Our main aims are to provide adequate basic pensions for all our citizens and second

(...) **[Unser Hauptziele sind es angemessene Renten-**  
*Our main objectives are adequate pension*

tier income related pensions for those on higher earnings to enable them  
**zahlung für alle Bürger zur Verfügung zu stellen und em**  
*payment for all citizens to make available and*

maintain a reasonable relationship with their pre-retirement standard of living. The means

**zw- zweite e::: Art von einkommenbezogene Alters**  
*sec- second type of income related age*

to achieve these aims has to be an overall pensions system that is financially sustain-

**versorgung für diejenigen die ein höheres Einkommen erhalten haben**  
*benefits for those who a higher income got have.*

nable for an ageing population. The reform process in Ireland also embraces the provision

**Das bedeutet wir suchen ein e::: finanziell ach nachhaltiges Lösung für unsere**  
*This means we are looking for a financial sustainable solution for our*

of health care a national anti-poverty strategy in operation for just one year to address the

**Vö- Bevölkerungsveralterung zu finden.** **Es gibt eine nationale Anti-Armut**  
*pop- population ageing to find. There is a national anti-poverty*

major problem of social ex-exclusion (...)

**strategie (...)**  
*strategy...*

In example 152, the interpreter repairs the lexical choice and collocation. The original cluster 'National Advisory Council' caused an overload of her processing capacity. The interpreter starts with 'un conseil' but soon realizes that 'Council' and 'Advisory' could be



rendered with 'conseil' in French so she decides to repair 'conseil' with 'comité' as 'conseil de conseils' would not have made much sense for the audience. At first, this does not look like an instance of mid-articulatory repair but upon closer inspection, we can see that the interpreter stops in mid-flow when she utters 'conseil de:::'. She is repairing in an attempt to reach completion of her output and ease the audience's deployment of processing capacities.

In example 153, the interpreter starts with 'Vö-' and repairs with 'Bevölkerung' (population). The repairs 'zw-zweite Art von einkommenbezogene Altersversorgung' and 'ach-nachhaltiges Lösung' which came immediately before this instance (see SS 17 U and SS 18 U in corpus available on CD-ROM), caused a difficulty for the interpreter who has to deploy added processing capacities. It seems difficult to know why the interpreter uttered 'vö-' but the complex lexical item in German ('Bevölkerungsveralterung') might be one reason. Moreover, the interpreter's processing resources are heavily strained. In an attempt to reach closure and ease the listeners' processing capacities, the interpreter decides to repair.

Similar examples are:

154. (SS 10 M/Juxtaposed)

155. (SS 11 M/Juxtaposed)

(...) And coming in this morning [I saw great structures outside and I was

(...) **[Als ich hier reingekommen bin habe ich**  
*As I here inside came have I*

wondering was this part of the conference but I'm told e::: they weren't

**gesehen was man hier drü im Hof aufge , e:::gerichtet hat und ich hab'mir über**  
*seen what one here ov- in the courtyard built up and I have thought*

putting up e::: these stages they were actually taking them down

**legt ob das Teil der Konferenz ist aber man hat mir gesagt daß e::: daß nicht e:::**  
*whether this part of the conference is, but one has told me that that not*

from last night because there was a rock concert in the square outside (...)



**aufgebaut wird sondern gerade wieder abgebaut wird (...)**  
*will be built up but rather at the moment taken down*

(...) My French colleague expressed e::: a need for more criticism in this area and

I'm [gonna help fulfill some of that need I hope in the next few

minutes. The concern and consternations however I think are very

legitimate. Under the guise of some vague social good (...)

In examples 154 and 155, there are two instances of Mid-Articulatory repair. First, the interpreter starts uttering 'drü' and repairs it with 'im Hof' (in the courtyard) and secondly, he utters parts of the verb ('aufge'), hesitates and repairs with 'gerichtet'. The second instance is more likely to be described as a hesitation. However, it is interesting to note that the first instance triggers a second one immediately afterwards. This tells us something about the interpreter's deployment of processing capacities. We can hypothesize that the first uncompleted utterance would have been 'drüben' (over there, on the other side). Here the interpreter decides to repair with a more specific element, i.e. 'im Hof'. The interpreter decides to repair in order to improve the contextual effect of his translation and to complete it.

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interpreter decides to change it to 'nächsten'. The interpreter does not repeat parts of the utterance. He simply repairs. Here again, we can say that the interpreter is repairing in order to reach completion and improved relevance.

Other examples are:

157. (TW 17/Juxtaposed)

(...)Eh, the functions of Telework Ireland are [basically to promote the  
(...) **Alors les [fonctions de notre organisation c'est**  
*So the functions of our organisation it is*

teleworking concept to bring the idea to employers and to employees be  
**en fait la de promouvoir le concept de travail de faire comprendre aux employeurs**  
*actually the to promote the concept of telework to make understand to employers*

cause we find there is still there's a lot of hype there's a lot of talk (...)

**et aux salariés la les b les avantages (...)**  
*and to workers the the the advantages...*

158. (TW 50/Juxtaposed)

(...) E::: we'll be looking at training issues cause again whereas I said there's a ready

(...) se **procurer le travail d'où viendra-t-il etc.**  
*to get the work from where will it come etc...*

supply [of interest in teleworkers a lot of people don't have the skills that are needed  
**[aussi le thème de le thème de la formation / Beaucoup de personnes n'ont**  
*also the subject of the theme of the training A lot of people don't*

for teleworking. They may not have a specific skill to sell so l::: and training  
**pas les qualifications nécessaires pour faire du télétravail il se peut qu'ils n'aient**  
*have the qualifications necessary to do some telework it is possible that they don't*



issues we'll be looking at e::: a code of practice sort of view  
**pas une possi une e::: des qualifications assez pointues donc il s'agit de les former à**  
*have a possi- a qualifications enough high so it means them to train*  
 the correct way the Communication Workers' Union who I  
**bon escient ensuite il s'agit de voir quelle est la meilleure façon donc d'utiliser e:::**  
*advisedly then it means to see which is the best way so to use*

think may be represented here today (...)  
**les les syndicats et aussi (...)**  
*the the unions and also ...*

The following examples are also similar and are presented as Table 32.

Reference	Input words	Reparatum (i.e. repair)	Probable Reparandum
159.(TW37/ Juxtaposed)	Get invited to events	nous avons cert- <u>différentes</u> <u>manifestations</u>	Certaines
160.(TW48/ Juxtaposed)	The problem is where is the work coming from	il s'agit de f- <u>savoir</u> <u>où</u>	Faire

**Table 32:** *Examples of output-generated Mid-Articulatory repairs (completion)*

In sub-category 4.5.4.2, we have seen that interpreters decide to repair in mid-flow in order to complete their utterance. They repair in mid-flow in order to be able to finish their utterance at lowest cost but we can presume that if they had not repaired they might have been able to complete, eventually at higher cost. The repair allows them to complete earlier, thus improving the contextual effect of their translation. It is also important to note that interpreters are not only trying to reach completion but also 'improved completion', in other words, the repair allows the interpreter to complete the utterance, even if sometimes the



repair is not necessary, see for example 152 (TW 40) or 159 (TW 37). Again, as in 4.5.4.1, all instances are juxtaposed.

#### 4.5.4.3 Slips of the tongue

In this sub-section, we will look at examples where interpreters repair their outputs in mid-utterance because of a slip of the tongue.

161. (SS 17 M/Juxtaposed)

(...) [ISSA membership e::: has been of considerable assistance to  
(...) **[in im in dieser ganzen Periode gewesen zu sein. Die Mitgliedschaft in der IVSS**  
*in in in this whole time to have been. The membership in the ISSA*

us here in Ireland for the development of our social security system during  
**war e::: uns sehr hilfreich in Irland bei der Entwicklung unseres sozi unseres soz**  
*was for us very useful in Ireland for the development of our soci- our soc*

that time. I wish to pay tribute (...)

**Sys unseres Systems der sozialen Sicherheit. (...)**  
*sys- our system of social security...*

In this example, the interpreter starts by uttering 'unseres sozi-' stops in mid-flow, repeats the pronoun 'unseres' and tries again with 'soz' but does not finish it, then repairs with 'sys' again does not finish it and starts afresh with 'unseres Systems'. The interpreter is obviously looking for 'unseres Systems der sozialen Sicherheit' but while trying to utter it, mixes the noun and the adjective. This looks like a possible slip of the tongue, as the input does not seem to be very complicated. The interpreter needs several attempts to find the solution he is looking for. This multiple repair mechanism shows us that the production monitoring resources have temporarily been diverted to other needs. It also indicates that the interpreter's output is allowed through the monitoring loop more than once. Although this instance of repair is not signalled, the fact that the interpreter needs several attempts before finding the appropriate utterance, seems to indicate that the receiver could have detected the



repair. The effort spent on the production of the multiple repair mechanism seems to be higher than the result itself. Therefore, it does not seem possible to say that the interpreter achieved improved relevance.

Similar examples are:

162. (SS 10/Juxtaposed)

(...)[Our most serious problem has been unemployment which has included a high

(...)[**Dans mon propre pays en Ir en Irlande la réforme de le des systèmes de**  
*In my own country in Ire- in Ireland the reform of the the systems of*

level of long term unemployment.

**sécurité sociale est également une priorité importante pour la politique publique.**  
*security social is also a priority important for the policy public*

We have tackled this in the first instance by endeavouring to make the social security

**Notre pru-problème le plus grave bien sûr est celui du chômage**  
*Our problem the most serious of course is the one of unemployment*

system more employment friendly (...)

**e::: c'est et également une proportion (...)**  
*it is and also a proportion (...)*

163. (SS 11 U/Juxtaposed)

(...) One of the fruits of these and other economic policies we have been [pursuing is

(...) **[Eine der**  
*One of the*

that the rate of unemployment in Ireland which a few years

**Früchte dieser und anderer wirtschaftlich wirtschaftspoli e::: politische**  
*fruits of this and other economic economic*

ago was among the highest in the Europe is now below the EU

**Maßnahmen ist daß e::: unsere Arbeitslosenrate**



measures is that

our unemployment rate

164. (SL 14/Juxtaposed)

(...) Now if these trends continue unabated if they're allowed to proceed without

(...)

**Wenn diese Tendenzen sich**  
*If these trends themselves*

[reasonable compromise then what may be left as we approach the dawn of the twen-

**[ungehemmt fortze fortsetzen wenn man diese Trends nicht unterbindet meine**  
*without restrain further continue if one these trends not undermine*

ty first Century is a community of independent (...)

**Damen und Herren dann glaube ich e::: gehen wir (...)**

*Ladies and Gentlemen then think I are going we (...)*

In example 162, the interpreter starts by uttering 'pru' and repairs with 'problème'. This is again a typical example of a simple slip of the tongue where the interpreter experienced difficulties. It seems difficult to speculate on the nature of the slip. What this tells us is that the interpreter is conscious of the inappropriateness and before completing the utterance, decides to repair in order to produce the appropriate lexical item.

In example 163, the interpreter utters 'wirtschaftlich', realizes the slip and decides to repair it with 'wirtschaftspoli' then hesitates and repairs with 'politische Maßnahmen'. The interpreter seems to be confused and cannot find the appropriate lexical item to render the original input. She is looking for 'Wirtschaftspolitik' but instead starts with the adjective 'wirtschaftlich' before repairing it. She spends quite a lot of time and effort on this multiple repair. This tells us that she is trying to complete her utterance in an attempt to maximize the effect or the relevance of her translation.

In example 164, the interpreter utters 'fortze', stops in mid-flow and repairs with 'fortsetzen'. This is a typical slip of the tongue where the interpreter realizes in mid-flow that his utterance is not appropriate. He then decides to repair in order to be able to complete and improve the contextual effect of his translation for the receiver.



Other examples are presented as Table 33.

Reference	Input words	Reparandum (slip of the tongue)	Reparatum (i.e. repair)
165 (SS 35 M/Juxtaposed)	to hand over to Mr (...)	se-e:::	das Wort ihm erteilen
166 (TW 47/Juxtaposed)	there's a ready supply of people	une e::: f	une offre de personnes

**Table 33:** *Examples of output-generated Mid-Articulatory repairs (slips of the tongue)*

In section 4.5.4.3, we have looked at instances of Mid-Articulatory repairs where interpreters attend to slips of the tongue. They do so in order to be able to complete their utterance and more importantly for the sake of effective communication. As we have seen, it is not always possible to achieve this aim, see example 161 (SS 17 M). Here, as in 4.5.4.1 and 4.5.4.2, all instances are juxtaposed.

4.5.4.4 *Hesitations*

In the following sub-category, we will look at hesitations repaired in mid-flow.

167. (SS 16 U/Juxtaposed)

(...) [That doesn't mean however we are putting reform on the long finger. A major

(...) **[ihren Höhepunkt erreichen das bedeutet nicht daß wir die Reformen hinaus**  
*its peak reach which means not that we the reforms further*

report on pensions is due to be presented to me later this week which is the fruits

**schieben. Ein wesentlicher e:::Bericht zu e::: Alte Alter V Versorgung**  
*away push. One significant report on age care*



of wide consultation with all interested parties.

<b>wird</b>	<b>a::: später in dieser Woche vorgestellt werden.</b>
<i>will</i>	<i>later in this week presented be.</i>

In this instance, the interpreter hesitates and utters the beginning of the word 'Alte', repairs with 'Alter' and then does the same for the rest of the word, utters 'v' (sound 'f') and stops in mid-flow before repairing with 'Versorgung'. This multiple repair mechanism shows us that the interpreter is experiencing difficulties in the deployment of processing capacities. The first repair is allowed to go through the monitoring loop a second time before being altered. All these hesitations do not allow the interpreter to maximize the effect of the translation for the receiver. Because of the repair, the interpreter misses some of the incoming information, 'is due to be presented to me' as well as the end of the input, 'which is the fruits of wide consultation with all interested parties'. The repairs allow the interpreter to complete her utterance and are juxtaposed.

Similar examples are:

168. (SS 23 M/Juxtaposed)

(...) The problems systems of [social security are now facing as you well

(...)	<b>[im Anschluß an der die die Ansprache des</b>
	<i>at the end of the address of the</i>

know are due to the major social demographic and economic changes that have

<b>Kommissars. Die Probleme e::: der sozial e::: Sicherung wie wir alle</b>
<i>commissioner. The problems of the social security as we all</i>

been taking place in recent decades and which are set to continue

<b>wissen gehen <u>nicht zu</u> e::: zurück auf die sozialen und demographischen</b>
<i>know go not back to the social and demographic</i>

for the foreseeable future (...)

<b>und ökonomischen Wandeln in den letzten Jahren (...)</b>
<i>and economic change in the last years (...)</i>



169. (SS 24 U/Juxtaposed)

(...) Thank you very much e::: Mr. Sullivan for giving me the flo[or e::: Mr Mr

(...)

**[Vielen Dank Herr  
Many thanks Mr.**

Minister e:::

Ladies and Gentlemen e::: dear friends

**Vorsitzender daß Sie mir das Wort übergeben haben**  
*chairman that you to me the word gave over have*

**Herr Minister meine  
Minister**

e::: it's a great pleasure for me e::: to welcome you all to this Euro

**Damen und Herren**  
*Ladies and Gentlemen*

**es ist mir ein großes Vergnügen Sie hier**  
*it is for me a great pleasure you here*

pean Regional meeting of the ISSA and I am specially pleased to have the

**alle bei der Regionaltagung des IVSS willkommen zu heissen. Ich bin insbe-**  
*all at the regional meeting of the ISSA to welcome. I am particularly*

opportunity to welcome you here in e::: Dublin Ireland (...)

**sondere erfreut die Möglich die Möglichkeit zu haben Sie hier in Dublin in Irland**  
*pleased the possi the possibility to have you here in Dublin in Ireland*

**willkommen zu heissen.(...)**  
*to welcome (...)*

170. (HU 10/Juxtaposed)

(...) und [als Seele der Familie sieht er die Intin Intimität und die Erziehung wobei er  
*and as soul of the family sees he the inti intimacy and the education where he*

(...) **[about the soul and the body of the family e:::as e::: the first e:::unit of**

unter Intimität bedingungsloses oder besser gesagt unbedingtes das heisst auch  
*under intimacy unconditional or better said absolute this means also*

**society. And what does he consider the soul of the family? The intimac intimacy and**



von der Leistung unabhängiges Angenommensein versteht wo Vertrauen wo  
*from the performance independent acceptance understood where trust where*  
**the education. Now what does he mean by intimacy? That means an unconditional**

Sinngebung wo Freude Ordnung Glaube Hoffnung und Liebe besteht.(...)  
*meaning where joy order faith hope and love exist (...)*  
**e::: m::: acceptance that does not determine (...)**

In examples 168, 169 and 170, the interpreter starts by uttering parts of the word, stops in mid-flow and repairs in a wish to complete the unfinished word.

Similar examples are presented as Table 34.

Reference/Example	Reparandum	Reparatum
171 (SS 25 M/Juxtaposed)	wahrschein	wahrscheinlich
172 (SS 27 M/Juxtaposed)	insbeson	insbesondere
173 (HU 5/Juxtaposed)	the thes	the future

**Table 34:** *Examples of output-generated Mid-Articulatory repairs (hesitations)*

In this sub-category, we have looked at the occurrence of hesitations repaired in mid-flow. All examples are juxtaposed and show that the interpreter is experiencing difficulties to deploy enough processing capacities. They also indicate that some items are picked up by the monitor although they are only repeated or simply completed.

#### 4.5.4.5 Conclusion

In this category of output-generated Mid-Articulatory repairs, we have seen that interpreters interrupt their flow of speech in mid-utterance in order to repair. This is further evidence of monitoring during speech. We called these examples mid-articulatory because the interpreter utters parts of a word or phrase before repairing. Interpreters repair in order to reach



acceptability<sup>43</sup> and completion, or they repair slips of the tongue and hesitations. Although this fourth category of hesitations might be considered not to fit into this study, we decided to include it as it shows the interpreter's monitoring function at work. Moreover, this category of hesitations does not only contain the typical hesitation 'e:::' but reveals that interpreters sometimes utter parts of their translation, go back and repair by repeating the whole element: see examples 168 (SS 23 M), 169 (SS 24 U), 170 (HU 10), 171 (SS 25 M), 172 (SS 27 M) and 173 (HU 5).

We have also seen that interpreters use mid-articulatory repairs in order to cope. In other words, they repair so that they can complete their utterance and reach acceptability. It can be seen as another way of being able to survive. Interpreters do this by balancing the effort they spend on the production of the repair with the effect it has on the receiver. The repairs we have analysed above tell us that interpreters are looking for improved relevance while repairing in mid-articulation.

Of 34 examples, we have seen that all were juxtaposed. The interpreter never signalled the mid-articulatory repair to the receiver. Having said that, seven out of 34 are a multiple repair: see examples 148 (SS 6 M), 157 (TW 17), 158 (TW 50), 161 (SS 17 M), 163 (SS 11 U), 167 (SS 16 U) and 173 (HU 5). This tells us that the first repair is allowed to go through the monitoring loop a second time, is checked again and attended to by the interpreter. These examples of multiple repairs are easily detectable by the audience.

#### *4.5.5 Synthesis*

In the second part of the analysis, we have looked at the occurrence of output-generated repairs. We used Levelt's categories of post-articulatory repairs and adapted them to the situation of the simultaneous interpreter. We also introduced a slightly different notion of mid-articulatory repair where the interpreter utters parts of a word before repairing it. Levelt did not have this type of repair but talked of 'covert repairs' in his analysis.

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<sup>43</sup> See Toury, 1995:57 for notion of acceptability.



First, we analysed examples of Appropriateness repairs (A-repairs) where interpreters either improve the idiomaticity of their first solution, repair an input interference, repair by adding information or repair because of context dependency. By trying to improve the idiomaticity of the utterance, the interpreter is confirming an assumption already held by the receiver by adding a more appropriate solution. All of this is done at some processing cost and we saw that the instances of repairs were also either preceded or followed by another repair. The interpreter is constantly balancing the effort with the effect the repair can have on the receiver. This comes under the category of 'acceptability' (Beaugrande and Dressler, 1981: 7). Here, the interpreter is trying to ensure that his/her output is coherent and cohesive for the sake of the audience.

Secondly, we saw that interpreters wish to repair for appropriateness when they realize that their output has been influenced by the original input. In other words, they often change their utterance when their output is calqued on the original speaker's utterance. This shows the interpreter's monitoring function at work. This category stems directly from the simultaneous interpreting process itself. By repairing a calque, the interpreter is taking the risk of spending more effort on the production of the repair itself than on ensuring the effect of the repaired utterance for the receiver.

Thirdly, we looked at instances of repairs where the interpreter is adding output. In this case, the interpreter is not adding any new information and s/he is not adding any significant contextual effect. Generally speaking, we have seen that the examples of appropriateness repairs can be described as largely redundant; in other words, the first solution would have been acceptable but the interpreter still decides to repair. We decided to call these examples 'interpreter-generated' as the interpreter is not adding any contextual effect for the audience, or is not adding any information. It seems interesting at this stage to wonder whether the production of an interpreter-generated repair is cost effective or not and to ask ourselves whether the interpreter's redundancy will allow him/her to reach maximum effect for a minimum effort, or to reach optimal relevance. It is also interesting to note that notwithstanding the difficulty of the concomitant activities, the interpreter still finds it necessary to produce such an interpreter-generated repair. If we look at Sperber and



Wilson's idea of contextual effects in relation to relevance, the examples of appropriateness repair presented above are not achieving great relevance (Sperber and Wilson, 1986: 119). Having said that, the existence of interpreter-generated appropriateness repairs is a confirmation and a re-affirmation for the interpreter him/herself. These, in themselves, indicate an interesting departure from the idea of simple error correction.

Finally, we included a sub-division in which the interpreter repairs on the basis of the context. These examples showed that the interpreter is willing to spend more effort and deploy further processing capacities in order to improve the contextual effect of the translation for the receiver. The examples analysed showed that the interpreter uses his/her world knowledge in order to produce the context-dependent repair. We also saw that the majority of Appropriateness repairs are either juxtaposed (18 examples) or disguised (12 examples). In other words, the interpreter is strengthening as well as confirming a previously-held assumption for the receiver. It is important to note that three instances are indeterminate, that is, they can either be disguised or signalled.

The output-generated Error-repair category showed us that interpreters repair their output in order to change a grammatical marker or attend to a slip of the tongue. Both categories tell us that interpreters do not only correct an error but wish to attend to trouble upon detection, either to reach a grammatically-appropriate output or to repair a slip. The simultaneous interpreting process itself can be problematic for the interpreter who has to process new information while producing an output. This leads to difficulties and can partly explain the numerous error-repairs found in the corpus. The vast majority of the examples are juxtaposed and tell us that the interpreter, while attending to the inappropriate output, is not signalling this action to the receiver. The occurrence of error-repairs is not simply a 'conservative' type of repair (see Levelt, 1989: 499) but is witness to the processing difficulties encountered by the interpreters during the simultaneous process.

In the category of Different repairs (D-repairs), we saw that interpreters start a word, stop in mid flow to give a 'different message' (Levelt, 1983: 51). In other words, interpreters change the word order or the direction of their output, and they do so by either abandoning the first



solution in order to reach completion, or they repair their output to reach a retrospective completion. This D-repairs category shows us that interpreters are repairing in the interest of survival. Consequently, they stop their utterance and change direction so that they can move on with further output. It is also interesting to add the sub-division of 'retrospective completion' in which interpreters look backward, stop their output and realize that the first solution was not appropriate. Simultaneous interpreting is usually described as a forward looking activity while consecutive interpreting is seen as being a backward looking process. While in simultaneous, the interpreter is processing information in real time, the consecutive interpreter has had time to listen to the speech once before rendering his/her interpretation of it. Therefore, simultaneous interpretation is forward looking while consecutive interpretation is backward looking. In our corpus, we saw that interpreters also repair by looking back and realizing that their first solution was not appropriate. The repair itself, therefore, is not in 'real time' but goes back to something uttered slightly earlier. By producing a D-repair, interpreters appear to reduce their processing effort and/or increase the effect of their output. This is typical of a search for improved or even optimal relevance.

The following example could not be presented in the sub-categories of D-repair because of its ambivalence:

174. (TW 5/Juxtaposed)

(...) to develop new systems of work maybe new e::: constructions in society that

(...) e::: **opinion concernant les nouveaux systèmes de travail etc**  
*opinion related to the new systems of work etc...*

are based around [these new spectra of work so hopefully I'll be ll'able to deliver

**et il se [peut qu'il de nouvelles sociétés soient construites sur la sur la base**  
*and it is possible that it that new companies are built on the on the basis*

some information to you based on my own experience and that of

**de ces nouvelles méthodes de travail dont je j'espère bien pouvoir vous vous donner**  
*of these new methods of work which I I hope can you you give*

teleworking community as it were in Ireland but also I would

**de nouvelles informations con-sur la base de mon expérience sur la communauté**



*some new information on the basis of my experience on the community*

*hope during discussion that I'd also (...)*

**des télétravailleurs en Irlande et donc (...)**  
*of teleworkers in Ireland and so (...)*

In example 174, the interpreter utters 'dont je' and repairs with 'j'espère'. At first sight, this example looks more like a hesitation than a D-repair but upon closer inspection, we can see that the first construction with 'je' stops and is repaired with a different one 'j'espère'.

Therefore, we can call this an ambivalent example. Here again, the interpreter is changing the direction in order to complete her utterance. This example shows that the interpreter can repair by changing the direction of her output without it being detected as a proper repair.

Another two ambivalent examples are the following:

175. (SS 7/Juxtaposed)

(...) If that challenge is to be met then systems of social [security have

(...) **sera un des plus grands défis du prochain siècle.**  
*will be one of the major challenges of the next century.*

**[Si nous serons à**  
*If we will be at*

to be adapted and reformed. This reform process has been under-

**la pour être à la hauteur de ces défis eh bien nos systèmes de sécurité sociale**  
*the in order to be at the height of these challenges well our systems of security social*

way in virtually all European countries over the past two decades and (...)

**doivent savoir s'adapter et être réformés.**  
*need to be able to adapt and be reformed.*

In this example, the interpreter starts with 'si nous serons à la', stops and repairs with 'pour être à la hauteur'. The interpreter is repairing a grammatical inappropriateness and also changes the direction with 'pour être à la hauteur de'. According to our categories, this is an example of E and D repair and shows that some examples are fuzzy and cannot be classified in only one category.



(...) and recommend tenable actions which will contribute to the realisation of  
 (...) **dans le télétravail et de lui recommander donc des actions qui soient possibles**  
*in telework and to him recommend so actions which are possible*

these opportunities.

[So we're not looking only at the telecommuting sce-

**qu'il soit possible de réaliser** [donc qui contribueront évidemment à la réalisation  
*which it would be possible to put into place so which will contribute of course to the im-*

nario where people move (...)

**de ces opp- de ces possibilités (...)**

*plementation of these opp of these possibilities (...)*

In this last instance, the interpreter repairs the representation of the adjective 'tenable' from 'des actions qui soient possibles' to 'qu'il soit possible de réaliser'. She committed herself too early to a syntactic construction, which created a problem as she cannot complete her utterance. This repair could be classified as being a D-repair but could also be described as an example of A-repair where the interpreter is improving the appropriateness of her first solution, therefore we suggest that this is an example of ambivalent repair. Because of the time-lag between the input and the output, the interpreter is influenced by the syntactic construction of the original and amalgamates the adjective 'tenable' with the rest of the input 'will contribute to the realisation of ...'. The lexical item 'tenable' causes a difficulty for the interpreter who looks for the most appropriate way of rendering the idea. In turn, it means that she is lagging behind the original input, and that therefore this instance of repair will have consequences on the rest of the interpreter's output.

In section 4.5.4, we looked at what Levelt would call 'covert repairs' (Levelt, 1983, 1989). We have re-defined this category as 'mid-articulatory repairs'. In the corpus analysed in this study, interpreters stop their output in the middle of a word before repairing. We saw that interpreters produce these repairs in order to reach acceptability, to complete their utterance and to repair a slip of the tongue or a hesitation. These examples are evidence that repairs are not only post-articulatory but that the monitoring loop is also working before the word



has been completely uttered. All examples show that the interpreter wishes to maximize the effect of the repair and therefore reach improved relevance. By repairing, the interpreter increases the deployment of processing capacities; however, this allows the interpreter to complete the utterance and therefore reach some ease of processing because incomplete utterances are difficult to process. Here again, we found an ambivalent example, which could not be presented in the sub-category of Mid-Articulatory repairs

177. (SS 16 M/EG/Juxtaposed)

(...) My department cele[brated last year its 50<sup>th</sup> anniversary and it

(...) **[Mein Ministerium auf der anderen Seite hat im letzten**  
*My Department on the other hand has in the last*

it was proud to have been a member of the ISSA e:::

**Jahr den im sein 50sten jähriges Bestehen begangen und e:::** **wir sind sehr stolz**  
*year the in its 50<sup>th</sup> year in existence celebrated and we are very proud*

for that period. ISSA membership e::: has been of

**darauf Mitglied des IVSS in im in dieser ganzen Periode gewesen zu sein. (...)**  
*member of the ISSA in this whole time to have been.*

considerable (...)

This example can be interpreted as a repair of grammatical marker ('in' with 'im' and again 'in dieser'), in other words an instance of E-repair or an example of Mid-Articulatory "structure shift" in Enkvist's (1982) sense, which could involve a change of plan from possibly 'in dieser Periode' to 'im Laufe dieser Zeit' and back<sup>44</sup>. Here, the interpreter needs two attempts to finally utter the appropriate marker. This instance of multiple repair shows that the interpreter's deployment of processing capacities is heavily taxed and that he is trying to find the best possible solution. Here, the reparandum is allowed to go through the monitoring loop more than once (see section 3.6.6). When we take a closer look at the co-text, we can see

<sup>44</sup> Also see Pöchhacker, 1994: 136; 1995: 74 for further details on Enkvist.



that the beginning of the utterance was also difficult. The first part of the sentence contains another repair and is hence problematic for the interpreter.

The speaker mentions a specific event 'celebrated last year its 50<sup>th</sup> anniversary' and refers to it as 'for that period' later in the same utterance. 'That period' is the anaphor. The interpreter is looking for the particular year when he repairs the first time with 'in, im' as in German, the listener would expect the year, i.e. 'im Jahre 1997'. Instead he decides to go back to the first possibility and repairs with 'in dieser ganzen Periode' and follows the original input quite closely. In his search for improved relevance, the interpreter has somehow maximized the cost but also maximized the effect. The utterance is completed and the juxtaposed repair is not signalled to the audience.

Contrary to the general assumption, the number of E repairs, although quite high, is outweighed by the sum of A, D and Mid-Articulatory repairs (see section 4.3 for more details). This corroborates what we already stated earlier, that repairs are not only about the simple correction of an error. Moreover, output-generated repairs can also be either juxtaposed, disguised or signalled. We found that the vast majority are juxtaposed. This is, therefore, a way of presenting a repair as confirming or strengthening a previously held assumption by the receiver.



## Chapter 5 Conclusion

This study has looked at the complex issue of repair mechanisms in simultaneous interpreting, a subject which has been largely neglected in interpreting studies so far. First we looked at models of speech production and reception in order to better understand the elements inherent in both processes. We described the debate surrounding the issue of the monitoring function and opted for an editor theory of monitoring adapted from Levelt (1983, 1989). A pragmatics-based approach to speech reception in communication allowed us to link it with the simultaneous interpreting process. Then we presented various models of interpreter behaviour and, drawing on these and other insights, proposed our own model incorporating the editor theory of monitoring and a pragmatics component in order to account for repairs in simultaneous interpreting (see 3.6.6).

To investigate actual repairs carried out by interpreters, a corpus was compiled of eight professional conference interpreters working at four different international conferences of a general interest. These authentic trilingual data (English-French-German) were later transcribed and instances of repairs were identified and analysed in order to investigate the initial questions:

1. Is Levelt's (1983, 1989) claim justified that repair is more than a matter of error correction?
2. If error repair is not the main motivation, what are the interpreter's priorities and the main drivers of repairs?

Although the study could not answer both questions definitively and comprehensively, the data showed the behaviour of these interpreters on these occasions. For instance, we saw that repairs go beyond the correction of an error contrary to what is suggested by many scholars and can be defined as a mechanism used to match the output against its fitness for purpose. The analysis of the data showed that the categories of repairs proposed by Levelt (1983, 1989) had to be refined and adapted in order to account for the specificities of the



interpreting process. We discovered two dimensions and suggested the existence of two main categories according to the trigger of the repair itself.

First of all, the interpreter can repair in order to achieve greater resemblance with the original input (input-generated repairs). In these instances, therefore, the interpreter will repair according to what the speaker has said. The extent to which this is done depends partly upon the time and resources available to the interpreter. Secondly, the interpreter may wish to achieve improved relevance by maximizing the effect of his/her output and minimizing the effort in producing and receiving it, which leads to an output-generated repair. Gerver (1976: 193) had already noticed that monitoring of both input and output during simultaneous interpreting could suffer from difficult listening conditions or difficult subject matter. In this study, we have shown that interpreters who are not necessarily facing any type of processing difficulty still repair (see in particular evidence of Appropriateness repairs in sections 4.4.1 and 4.5.1) as if the process of improving relevance is a constant, restricted only by the limited time and resources available.

Futhermore, the analysis of the corpus shows instances where the interpreter appears to repair for him/herself, or produces what we have called an 'interpreter-generated' repair. This idea goes beyond the notion that translation exists only when the audience can understand its meaning (see Lederer, 1984: 150) because in the case of an interpreter-generated repair, the interpreter is not trying to make sense for the audience but is repairing for his/her own sake. The corpus also revealed some instances of delayed repairs (eg. 55: TW 33: (...) a attiré énormément d'intérêt, a suscité beaucoup d'intérêt) and although we did not concentrate on the temporal aspects of repairs, we chose the editor theory of monitoring which plausibly accounts for delayed repairs, rather than connectionist theories (for further details, see section 2.3).

We have seen that the interpreter also produces repairs which can be described as 'signalled' if the interpreter tells the listener that s/he is making a repair, for example by apologizing (eg. 16: MU 2: '(...) Exekutivsekretär des Wirtschafts-und Sozialrats der Vereinten Nationen für Europa. Entschuldigen Sie der Wirtschaftskommission für Europa (...)); 'juxtaposed', when



the interpreter utters the first solution and adds on the repair immediately afterwards (eg. 65: HU 7: (...) 'is directed is addressed to all men of good will'); or 'disguised', when the interpreter links the reparandum and the reparatum with 'and', thus not signalling the repair to the listener (eg. 7: TC 4: 'en premier lieu le gouvernement doit faciliter et accélérer la privatisation'). We also included a further category of 'Indeterminate Signalled or Disguised' repairs which are characterised by the use of 'or' between the reparandum and reparatum (eg. 12: SS U 6 'in Familien aufwachsen oder in Heimen in Familien aufwachsen'). We have seen that the vast majority of repairs are juxtaposed. Nevertheless, the small number of signalled and disguised repairs in the corpus tell us that the interpreter wishes either to make sure that the audience knows s/he is producing a repair or else to hide the correction and thus allow for a rework of the translation.

A further important aspect is the occurrence of simple and multiple repairs. In the model we proposed, we placed the monitor outside the speech production process and allowed for the reparandum to go through the monitoring loop more than once (see 3.6.6). The corpus has shown evidence of multiple repair mechanisms where the interpreter not only produces a repair but may need several attempts before reaching completion (see eg. 114: 'nous voilons, vouillons, voulons voir (...)'). We can posit that the interpreter needs to reach what Beaugrande and Dressler (1981: 42) call "a threshold of satisfaction" before deciding to stop repairing.

This study of repairs in simultaneous interpreting has examined a corpus of professional conference interpreters. However, the performance of professionals could be compared with a corpus of trainee interpreters. As Moser-Mercer (1997) points out, there are significant differences in the awareness of the monitoring function, depending on the subject's level of experience. Hatim and Mason (1997: 64) give a further reason for choosing trainee interpreters rather than professionals in their corpus: "(...) evidence of self-correction (repair), hesitation, false starts and so on may be less readily available from the polished performance of seasoned professional interpreters than it is from the work of trainees". In this study, we have nevertheless seen that evidence of repairs is plentiful (see section 4.3) and therefore departs from the general idea that professional interpreters, if they repair at all,



hide their corrections in order to produce a coherent and fluent output (see Bastian, 1991: 8). Having said that, it might be interesting to make a comparison with trainee interpreters to establish whether the repairs are more numerous or not<sup>45</sup>. Moreover, this research could also be applied to other modes of interpreting, such as consecutive interpreting.

Furthermore, the study itself is limited to eight interpreters and would need to be replicated in order to limit the number of variables (see Gile, 2000: 96) and offer claims of more generalisable value. Indeed, our corpus contains different types of source input, the subjects are different interpreters and they are working in different languages. The scope of the study did not allow us to focus on other aspects of interest, for example the prosody of the original input, which could be a trigger for the interpreter to repair, or not. What this study has done is to give us some insights into the interpreter's mind at work, or the interpreter's deployment of processing capacities and decision-making processes. It also provided further empirical analysis aimed at a better understanding of the interpreting process and shows that an interdisciplinary approach can advance scholarship in the area.

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<sup>45</sup> For further details, see Sommerlatte's (1994) study of repairs as a strategic tool. She found, for example, that trainee interpreters were more likely than professional interpreters to repair. See also study by Tissi (2000) on student interpreters' output in terms of stalls and repairs.



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